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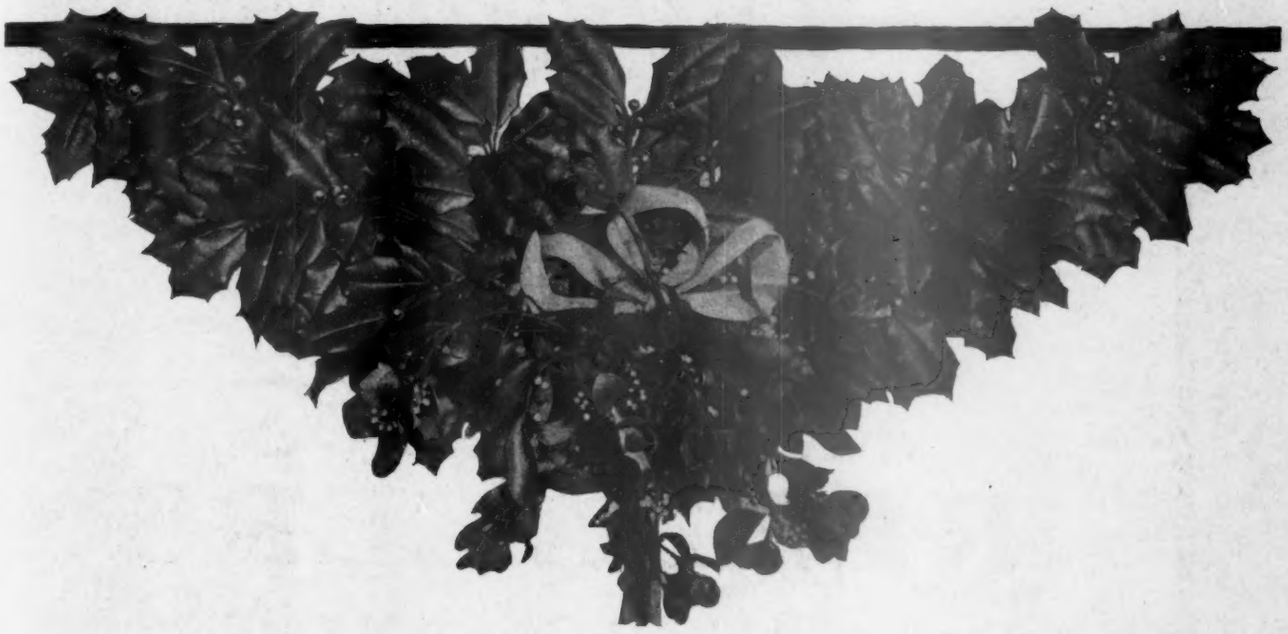
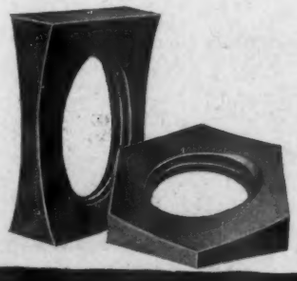
# Railway Age

SECOND HALF OF 1922—No. 26 NEW YORK—DECEMBER 23, 1922—CHICAGO SIXTY-SEVENTH YEAR



WE believe Christmas to be a fitting time to express to all of our friends our appreciation of the many courtesies shown us during the past year.

Therefore we wish to you and yours a Christmas of happiness and a New Year of contentment and success.



BOSS NUT COMPANY
CHICAGO U.S.A.

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***LARGEST MANUFACTURERS OF CHAIN IN THE WORLD***

Volume 73 Number 26

Published Weekly by Simmons-Boardman Pub. Co., Woolworth Bldg., New York. N. Y. Subscription Price U. S., Canada and Mexico, $6.00; foreign countries (excepting daily editions), $8.00, and $10.00 a year including all dailies; single copies, 25c. Entered as second-class matter January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.

The Table of Contents Will Be Found on Page 5 of the Advertising Section

# Are You Making Friends for the Railroads?

PERHAPS THE MOST important fact that needs to be brought home to every railway officer is that the future of the railways is in the hands of their own officers. We do not mean merely in the hands of their chairmen and presidents, but in the hands of their officers from the chairmen and presidents down to the trainmasters, the road foremen of engines, the traffic solicitors and other subordinate officers.

Too long have railway officers complained that the railways are being ruined by public sentiment and public regulation without themselves putting forth the efforts that they could make and must make to change public sentiment and improve government regulation. A man may lose a fight even though he fights the best he can. But he always stands some chance of winning it if he fights, while he is sure to lose it if he defaults. The railways have lost struggles repeatedly within recent years because they have defaulted when, if their officers generally had stood up and defended them, they could have won.

The railways cannot, however, win important fights unless they have many friends to help them. They never will have enough friends unless their officers of all ranks take trouble and make efforts to make friends for them. The *Railway Age* published in its issue for December 9 an editorial entitled "Making Friends for the Railroads." In that editorial we tried to point out a few of the things that the officers ought to do to make friends for their railroads. We have received a letter regarding this editorial from one of the leading railway officials of the United States—a man who came up through the operating department and whose opinions upon all important railway matters are universally respected. He says:

"I have just taken a good deal of pleasure in reading your editorial in the *Railway Age* of December 9, 'Making Friends for the Railroads.' This is, in my opinion, one of the main things towards which the energies of the railroad organization should be devoted. There is a great lack of the realization of the importance of it. I hope your editorial stirs up some interest in the matter."

One question which every railway officer and every railway employee who desires to see private operation and private ownership maintained, who desires to see the railways prosper, and who desires to see the railroad business continue to afford opportunity for a successful career is: "Am I really trying every day to make friends for my railroad and for the railroads as a whole?" Any railway officer, or for that matter any employee, who cannot answer that question in the affirmative, is not doing his duty to his railroad or himself. The plain truth is that there are many men connected with the railways who are constantly engaged, not in making friends, but in making enemies for them. This is true of every official and every employee who fails to give the public the best service practicable, or who fails patiently, courteously and intelligently, when opportunity offers, to explain the reasons why it is not always possible to give the public the service which it wants or the rates for which it asks.

The successful running of a railroad involves much more than maintaining tracks, making up and running trains and collecting freight and passenger charges. The failure of many people on the pay roll of the railroads to recognize this fact and act accordingly is responsible for a large part of the troubles of the railroads. There are many railway men, and even many railway officers, who steadily perform their regularly assigned duties, but who make no effort to do anything more. They do not try to so participate in the business and other activities of their communities as to make the people of the communities feel that the railway is just as much interested in their welfare as any other business concern. They do not try to acquire broad information respecting the work of their own departments so that they can answer the reasonable and natural inquiries of shippers and travelers. They do not inform themselves as to the facts regarding such matters as alleged "over-capitalization" and excessive valuation of railroads, so-called "guarantees" of net return, the reasons why freight and passenger rates are higher than they used to be, the reasons why the railways cannot furnish all the freight cars wanted promptly, etc., in order that they may impart this information to others. How can railway men expect the public to get correct information regarding these matters unless railway men will inform themselves concerning them and give the information to the public?

We do not mean to suggest that railway officers and employees should engage in acrimonious controversies with patrons who may complain about service or rates, or that they should cram facts about valuation, the decline of railroad development, etc., down unwilling throats. Far from it. What we do mean is that there are millions of people who earnestly desire information regarding these and other railway matters, and that railway officers, and employees who are interested in the welfare of the railways, should make a real effort to inform themselves concerning them, and should, when good opportunities offer themselves, give people the information they desire and will welcome.

Where can railway officers and employees get the information they must have in order intelligently to discuss those problems of their industry in which the public is so much

interested? The public is interested in the facts about each individual railroad, but even more in the facts about the railroads as a whole. Railway men can get or should be able to get from their own higher officers all the information they need about their own railroad. There are many sources from which they can get information regarding the railroads as a whole. They can write to the Bureau of Railway Economics in Washington and get any information for which they may ask regarding the railways as a whole. We believe that without unseemly immodesty the *Railway Age* can truly say that if railway officers and men would carefully read the articles and editorials dealing with railway public problems that are published in every issue of this paper, they could soon equip themselves to discuss intelligently all the questions regarding the railways in which the general public is interested.

It is a fact that is only too well known that hundreds of thousands of railway employees have, under the leadership of the heads of their unions, become enemies of private ownership and are actively disseminating propaganda against private management in every community in the country. These employees get the information or misinformation they disseminate by reading the weekly and monthly publications issued by their labor unions. Can any railway officer or any loyal employee believe he is doing his whole duty to his railway as long as he lets literally hundreds of thousands of employees do more to destroy public confidence in the management of his railway and in the entire policy of private management than he does to defend the management of his railway and private management as a policy?

There is crying need for a great awakening of all railway officers and all loyal employees with respect to this matter. Every management ought to adopt a policy of encouraging and stimulating its officers and loyal employees to do all they can to make friends for the railways by treating the public well, and by speaking out in answer to the misrepresentations and defamations of railway management which are constantly being spread abroad. The managements of some railways have adopted the practice of sending at intervals to many of their officers literature called "talking points," which gives facts and arguments that may be used to refute misrepresentations. Why should this not be done by the management of every railway? Undoubtedly many officers have not spoken out in defense of the railways when they have been attacked because they have feared that they would be criticised by their superiors or because they have not been furnished information which they could use in answering misrepresentations.

The practice of a great majority of railway officers of remaining silent when the railways have been under attack from innumerable unfriendly sources has been followed too long. No industry can year after year allow such false, malicious and extensive propaganda against it to go on virtually unanswered in innumerable communities without finally paying a terrible price for the timidity and silence of those who ought to defend it.

# Six New Records Made by the Railways

SEVERE WINTER WEATHER has come in the larger part of the country and is interfering in a normal way with railroad operations. Before it came, however, the railroads succeeded in breaking almost every record ever made in the movement of freight. Since there are likely to be unusual complaints regarding deficiencies of transportation during the winter, it is well now to record certain facts. In spite of the shop employees' strike and other difficulties, the railways within recent months have made the following new records:

1. They moved more freight in November than in any previous November in history and thus far have broken all records for December. The four weeks ended on December 2 correspond roughly with the month of November. In these four weeks the number of carloads of freight moved was 483,000 more than in 1918, 530,000 more than in 1919, 221,000 more than in 1920 and 763,000 more than in 1921. In the week ended December 9 they moved 81,875 more carloads than in the same week of any previous year.

2. The week ended November 25 terminated a period of ten consecutive weeks in every one of which the railways moved more than 950,000 carloads of freight. This is the first time in history that they ever moved so many carloads for more than seven consecutive weeks.

3. The amount of freight moved in November and December has so greatly exceeded all previous records that it has made the total carloads handled in the 16 weeks ended December 9 larger than the amount ever moved in the corresponding 16 weeks of any other year. To state the matter in another way, the total number of carloads of freight moved since the coal mines began to open late in August is 156,245 greater than in 1920, the previous record year.

4. In 34 out of 35 weeks ended on December 2 the railways moved more carloads of "miscellaneous freight" than they ever did in the same weeks of any previous year. Transportation experts regard the amount of miscellaneous freight shipped in any given period as the best indication of what general business activity and the total amount of freight business offered to the railways in the months immediately ahead will be. If the loadings of miscellaneous freight during the last nine months are any criterion, the railroads will be called upon to handle a record-breaking business for months to come.

5. The railways on Monday, December 11, loaded 45,886 cars with bituminous coal. This is the largest number of cars ever loaded with bituminous coal on any one day.

6. During six consecutive weeks the total "car shortage" reported exceeded the largest car shortage ever reported in any single week of any previous year. The largest net shortage ever reported before was on September 1, 1920, when it was 146,070 cars. In the six weeks ended on November 23 the net car shortage was never less than 147,259 cars, and went as high as 175,523 cars. On November 30 the net shortage was 128,191. This figure represents a substantial reduction, but it shows that in spite of the fact that the railways within recent weeks have broken all records

with respect to the number of cars loaded and moved at this time of year, the inadequacy of transportation is still almost unprecedented.

If ever any forecast could safely be based upon railway statistics the following two predictions may safely be based upon the foregoing facts:

First, the railways will be offered and will handle more freight in 1923 than in any previous year in history, unless prevented by another coal strike or railway strike.

Secondly, the demand for railroad transportation will in 1923 exceed the amount of it that can be furnished by a larger margin than in any previous year.

The lesson the foregoing facts suggest to the railways is that they should put forth every effort to secure greater utilization of the existing facilities and to improve and enlarge their facilities as rapidly as possible.

The moral for the shippers is, first, that they should ship all the freight they can as soon as practicable, and that, secondly, they should co-operate with the railways in increasing the efficiency with which existing transportation facilities are used by loading cars to their maximum capacity, by loading them and unloading them as promptly as possible, and by delaying them in case of reconsignment as little as possible.

The moral for law makers and regulating commissions is that they should help the railways in every reasonable way to increase the net return earned by them in order that they may be able to raise the large amounts of new capital which must be invested if the capacity of the railways is to be increased anywhere near in proportion to the demands that will be made upon them by industry and commerce.

**Much Consolidation Activity**

There is complaint in some quarters that the American railroads are not making as much progress with consolidations as they ought to be making or as much as the railways in some other countries have been making. There may be some ground for complaint on this score, although it can be suggested that there might be drawbacks in a consolidation program carried out too suddenly or that there might be reasons for delay incident to the method whereby the Interstate Commerce Commission has to draw up and hold discussions on a plan upon which the consolidations program is to proceed. However, we trust that those who are suggesting the desirability of more rapid process will be satisfied with the amount of work accomplished in the second week of December. In that week there continued the consideration which is being given in New England official circles to the treatment which should be accorded the roads of that district in the consolidation plan. There was also a great deal additional said before the commission in Washington by representatives of the Southern Pacific and Union Pacific concerning the disposition of the Central Pacific. The third development was the announcement that the International-Great Northern had, subject to the approval of the Interstate Commerce Commission, become a part of the St. Louis-San Francisco which, whatever else it may be, is one of the most important steps in the way of consolidations that has thus far taken place. Of course, no one talks much about consolidations without mentioning the Van Sweringens of Cleveland. They came through with the fourth development of the week and likewise a most important one, namely with the news that the Van Sweringen interests had secured an option on H. E. Huntington's Chesapeake & Ohio stock which indicates that the Nickel Plate-Lake Erie & Western-Clover Leaf system possibly has its mind on including also the C. & O.-Hocking Valley lines with the latter's valuable coal traffic and outlet to the Atlantic seaboard. All of this means that progress in consolidations is now finally becoming a much more practical matter than it hitherto has been. Probably it is not by chance that we are hearing fewer extravagant rumors about this than was the rule a few months ago; the real developments supply news enough in themselves.

**Shop Operation and Management**

During the last few years the Mechanical Division of the American Railway Association has made a commendable start on the consideration of problems of shop operation and management. The Committee on Scheduling and Routing has presented valuable reports which have become even more important since the strike. Many railroad shops have functioned fairly well in the past with little direction of individual workmen because a large proportion of the men were old employees familiar with local conditions. Detailed supervision is more necessary now because many of the new men taken into the organizations have little knowledge of railroad practice. Probably scheduling systems could profitably be extended to include practically every important railroad repair plant. Labor turnover is now considerably greater than in former years and it may continue to be high for some time to come. Under such a condition the systematic planning and assignment of work, which scheduling systems provide, would unquestionably increase shop output to a very marked degree. It is probable too that further developments along the same general line would be advantageous. The instruction of machine operators in the details of their work, providing charts showing methods of setting up machines and the proper speeds and feeds to use for maximum production, would relieve the foremen of a large amount of work and would enable them to get far better results from inexperienced mechanics. Such methods are widely used in industrial plants because they have demonstrated their value in reducing costs. Some railroads have applied similar systems with satisfactory results. Even if there is not time for the preparation of an exhaustive report on this subject for the meeting next June, it would certainly be worth while for the Mechanical Division to arrange for individual papers telling what results have been obtained by roads that have introduced special methods of instruction and supervision in shops.

**Like Figures Should Agree**

In last week's issue of the *Railway Age* it was suggested that the monthly reports of railway revenues and expenses would prove more valuable if the figures given in them were comparable in better fashion than they now are with the figures which finally appear in the annual reports issued after the close of the year's business. Three reasons were given which in part explain much of the present lack of complete comparability: (1) correction of the figures, (2) the showing of different mileage in the monthly report from that in the annual report, due usually to the inclusion of subsidiary lines in the latter and not in the former, and (3) the failure in the annual report to show the figure of net railway operating income. There are many railroads which are giving proper regard to these considerations, so it must be understood that we are making no attempt to present any particularly new and novel idea. The purpose of the monthly or the annual report, as we see it, is to furnish necessary

information to the management, to managements of neighbor roads, to the Interstate Commerce Commission, to the stock and bond holders, and to the public generally. Each of these has a different use for the statistics and to each they are important although, of course, to varying degree. It is one of the features of railway operations that those interested in railways are given more information concerning the properties in which their interest lies than is the case of any other group of properties—public utility, industrial or whatever they may be. This is a point which must always be borne in mind by the railway accounting officer. It seems to follow that the earnings figures issued should, therefore, be as informative as they can consistently be made. It is very much of a question, however, whether figures can be termed adequately informative which, as is frequently the case, differ for one reason or another although the respective figures purport to cover the same line for the same period. It is sometimes extremely difficult to ascertain the proper figure of a railway's operating net for a particular period because of the manner in which one has to try to select the proper one of several figures, all of which purport to represent the same thing. The present too common manner of supplying different figures purporting to cover the same thing adds a degree of inconvenience that seems hardly necessary in view of the state of the art of railway accounting.

**The Frisco I.-G. N. Consolidation**

The St. Louis-San Francisco's purchase of the entire capital stock of the newly reorganized International-Great Northern from the latter's voting trustees is, of course, subject to the approval of the Interstate Commerce Commission. The purchase, as it happens, is not in line with the commission's tentative plan of consolidations. The commission's plan puts the I.-G. N. in a Chicago-Missouri Pacific system with the Texas & Pacific, the Missouri Pacific, etc., thereby, among other things, maintaining in one system the so-called Sunshine Route from Houston and from Laredo and San Antonio through Longview Junction and Texarkana to St. Louis. The Frisco in the tentative plan is put with the Katy and Cotton Belt and various smaller lines to form a so-called Frisco-Katy-Cotton Belt system. It is, of course, a question how much importance the commission may place upon its own tentative plan. It is presumed that the plan was offered only as a starting point for discussion and was meant to offer some practical suggestions around which the discussion could take place to greatest advantage. The International-Great Northern should prove of great value in the Frisco system. The road has not a high grade physical plant and its net earnings have not been extremely good. On the other hand, it serves an expanding territory and an analysis of the growth of its gross earnings over a period of years will show that it is a property of possibilities. As a part of the Frisco system, if that result comes to fruition, the I.-G. N. should be better able to realize on these possibilities. It will offer to the Frisco an advantageous outlet to the Gulf of Mexico at both Houston and Galveston, a factor which should prove of leading importance because of the former's position in the petroleum industry and to a lesser extent in the lumber business and because of the latter's standing as a grain port. Laredo, Tex., reached by the San Antonio division, exceeds in importance as a point of interchange for business with Mexico, all the other cities on the Rio Grande combined. There used to be a great amount of business between the United States and Mexico and presumably the time will eventually come when there will be again. The I.-G. N. should be able to realize on this business to a greater extent than any other road this side of the border. The I.-G. N. needs, it is true, a great amount of physical rehabilitation but considering the low price the Frisco has paid for it and the possibilities of the property, it looks, on the whole, as if the Frisco had taken a wise step in effecting the proposed purchase.

**Foreign Railways in 1922**

The year 1922 has been an eventful one for railways the world over and the *Railway Age,* in its Annual Statistical Number, to be issued on January 6 of the new year, will publish a number of articles covering developments of the year in leading countries of the world. In most countries the railways have in 1922 been somewhat more successful financially than in 1921 and some steps have been taken to renew programs for extensions and betterments which were curtailed during the war. Many changes in management and organization have either been made or seriously projected. The railways of Great Britain have been consolidated into four regional systems. The French railways have been closely co-ordinated. China has had to face a railroad labor problem for the first time in history. In Canada all the government-owned lines have been united under the management of Sir Henry Thornton, who has served in important executive positions both in this country and in England. The war-worn railways of Central Europe have made rapid progress in restoring at least some measure of their former efficiency. Even in unhappy Russia the railways, with the co-operation of Americans, were made to function with the efficiency necessary to distribute thousands of carloads of foodstuffs to the starving people. Many important construction projects have been begun during the year. The railways of most countries find themselves beset with many perplexing problems—in Australia it is the unification of gage, in India the adoption of a more satisfactory method of management and so on. The labor problem has been dealt with in some countries and, in at least one important instance, it must be admitted, in a manner much more satisfactory to all concerned than has been the case in America. These developments, we feel, are of interest to American railroad men who wish to keep well informed about railroading the world over and who may find in the achievements of their foreign confreres suggestions for the solution of some of their own problems. The manufacturer of railway equipment and supplies who is interested in foreign markets for his products should likewise find this information of value. The foreign section of our Annual Statistical Number for last year was, we have reason to feel, a welcome addition to the other material presented in that issue, and in our opinion this section of our forthcoming statistical number will be none the less so.

## On a Five Per Cent Basis

In 1922 Great Northern stockholders have received one quarterly dividend of 1¾ per cent and one semi-annual dividend of 3½ per cent. Ostensibly the stock has been kept on a 7 per cent basis but the change from a quarterly to a semi-annual basis, resulting as it did in the omission of one of the quarterly payments, made the total dividend payments for the year only 5¼ per cent. On Monday of this week, the directors declared a semi-annual dividend of 2½ per cent. This dividend is payable February 1 and it results in putting the stock on a 5 instead of on the 7 per cent basis which had been maintained unbroken since 1899.

The reduction in the dividend had in great measure been expected, and apprehension that it would take place has existed at least as far back as the spring of 1922 when the quarterly dividend was omitted and the change made to a semi-annual basis. Great Northern earnings have been rather poor since the beginning of federal control. In the

three years 1918, 1919 and 1920 combined, net railway operating income was only slightly in excess of the standard return for one year and 1921 was not a great deal better, although in these years standard return, guaranty and extra Burlington dividends assisted in maintaining the corporate net. In 1922, prior to the railway shopmen's strike, conditions were beginnng to look much brighter. In July the road operated with a ratio of only 64. At the end of August net railway operating income for the eight months was $8,248,-122, or about $7,250,000 better than for the same period of 1921, and the Great Northern's best months were still ahead of it. It appeared then that the company would in all likelihood be able to maintain its 7 per cent rate.

This promising progress was not continued. Increased maintenance of equipment charges due to the railway shopmen's strike and higher fuel costs helped to increase operating expenses. At the same time, difficulties were experienced in getting a proper car supply, and ore traffic which had been running very heavy slumped off rather badly and somewhat earlier in the season than usual. The result was that the September and October earnings were not as good as had been hoped. For the first ten months the net railway operating income of $12,805,569 compared with $8,200,409 for the same period last year and the operating ratio was 77.8. The 1922 earnings have been better than those for 1921 but not sufficiently better to be what one could term at all satisfactory. The Great Northern, in company with several of the other roads in the northwest, has been making a very slow recovery from war conditions; it is now completing its fifth lean year in succession. Under the conditions, it was quite in order that the directors should have decided to take the conservative course in reducing the dividend rate.

## New Books

*Freight Traffic Red Book for* 1923. *By H. G. Williams and C. J. Fagg.* 582 *pages.* 8 *in. by* 11 *in. Cloth. Published by The Traffic Publishing Company,* 150 *Lafayette Street, New York City.*

This well-known book contains about 100 more pages than that issued one year ago, and includes new sections on storage, transit privileges, payment of freight charges, rules of practice before the United States Shipping Board, and parcel post. There is also much other new matter. The great mass of freight traffic information contained in this book comprises nearly everything that could be put into a book of its size and which is wanted for reference on the desk of the local freight agent or the shipper. For shippers it is called an "everyday guide," and it justifies the name. Each detail is treated with great care and evidently with scrupulous attention to accuracy. The Interstate Commerce Act, with rules of practice before the commission and other cognate matter, fills 73 pages; and the forms and tables at the end of the book fill 83 pages. This gives an idea of the completeness of detail which characterizes the book. The publishers promise to issue supplements free, as may be needed, to keep subscribers informed concerning important changes in railroad freight laws or practices. In the 12 months now past five supplements were issued.

*Proceedings of the American Railway Engineering Association.* 1,370 *pages, illustrated.* 6½ *in. x* 9½ *in. Published by the Association,* 431 *South Dearborn street, Chicago.*

In this volume are included the reports of the 23 standing and special committees presented at the twenty-third annual convention of this association in Chicago on March 14-16, 1922, inclusive, together with the discussions thereon. This convention maintained the high standard for constructive work which has long characterized this association. Among those reports which are of special interest and value are those on "Warehouses in Connection with L.C.L. Freight Houses," "Specifications for Movable Railway Bridges," "Ash Pits," "Engine Terminal Layouts," "Methods for Training and Educating Employees in Engineering and Maintenance Work," "The Economical Operation of Trains Against the Current of Traffic on Multiple Track Railways," "Specifications for Buildings for Railway Purposes," "Freight House Design" and "Pacific Coast Marine Piling." This volume also contains a monograph on "The Flat Disk Center for Turntables" by B. R. Leffler, bridge engineer, New York Central Lines West of Buffalo, Cleveland, Ohio, and a complete report of a special committee on Electrolysis.

*American Malleable Cast Iron. By H. A. Schwartz,* 416 *pages.* 6 *in. by* 9 *in., illustrated, bound in cloth. Published by the Penton Publishing Company, Cleveland, Ohio.*

The American "black heart" malleable iron industry, which now has an annual capacity for one and a quarter million tons of castings, dates back to the discovery of this process in 1826 by Seth Boyden in a small foundry in Newark, N. J. The process is quite different from that employed in Europe for making "white heart" iron, which was first described by Reaumur in 1722. This book, which is the first complete treatise on "black heart" malleable, has been written by a recognized authority on the subject. There are chapters on the history of the industry, methods of manufacture, principles of metallurgy, procedure for tests and an outline of properties. It is made more comprehensive by the addition of a bibliography of nearly 200 references to chapters and articles in English and foreign books and periodicals, and by a well-prepared index.

From its scope, the book has evidently been written to meet the needs of the user, as well as those of the practical foundryman and the metallurgist. For the producer there are chapters on melting stock, fuel, refractories, furnaces and their operation, annealing practices, molding, pattern-making, cleaning and finishing. Inspection, tests and metallurgy are well covered, together with information relative to physical, thermal and electrical properties.

As a handbook of modern malleable practice, a record of past and present metallurgical investigation, and a compendium of information on the permissible uses of the product, it should be of value to the many railroad men responsible for the design, purchase or use of malleable castings.

*The Hot Springs of Japan.* 504 *pages;* 196 *illustrations and* 15 *maps.* 4½ *in. x* 6¼ *in. Bound in cloth. Issued by The Japanese Government Railways, Tokio, Japan.*

This is a very complete guide book, printed in English. It has been compiled by F. de Garis, evidently an experienced and accomplished editor in this field. The book covers Korea (Chosen), Formosa and South Manchuria, as well as Japan; and includes also the principal cold springs; though, from a statement in the text, it would appear that the Japanese people, of all classes, including farmers, make a practice of bathing in the hottest water they can find, and usually several times a day. This book, however, is made for foreigners, for whom it explains everything in great detail.

The mineral springs of Japan number more than 1,100, and they are to be found in the mountains, in the valleys, at the sea coast and everywhere. Some railroad lines reach a large variety of springs (classified by their chemical or medicinal qualities), while some of the important springs are reached only by using a motorbus or a jinrikisha, or both. In these pages travelers are instructed as to all these conveyances, in connection with each spring, with the same care and detail as in the case of railroad trains and hotels.

A notice in the front of this book says that the official guide books of the Japanese Railways are for sale at the best book stores in the United States, Canada and Great Britain.

# Letters to the Editor

[*The* RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about* 250 *words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.*]

## Signaling Busy Terminals

CLEVELAND, Ohio.

TO THE EDITOR:

The articles on "Signaling Busy Terminals" by T. Holt, signal engineer, Chicago Union Station Company, which appeared in your issue of November 11, 1922, is of value to railroad managements having to pass on this question. In this connection it is interesting to note the similarity existing between the indications which have been decided on for use on the Cleveland Union Terminal and those which Mr. Holt proposes to use on the Chicago Terminal.

The indications I have proposed conform very closely with those suggested by Mr. Holt; the name, however, is different and necessarily the control of train movements must be different. In each case the proposed indications conform with existing rules in the book of rules for the government of the operating department. They are:

| Color Light | Name | Indication |
|---|---|---|
| Red | Stop Signal | Stop |
| Yellow | Slow-Speed Signal | Proceed at slow speed prepared to stop. |
| Green | Clear-Slow-Speed Signal | Proceed at slow Speed. |
| Yellow Red | Approach Signal | Approach next signal prepared to stop. |

A comparison of the two schemes follows:

1. Red light displayed: The name "Stop signal" and indication "Stop" are the same.

2. Yellow light displayed: The name "Slow-speed signal" and "Caution signal" have similar meaning; however, the indications proposed "Proceed at slow speed prepared to stop" checks more closely with indication No. 4 proposed by Mr. Holt, *i. e.*, "Proceed with caution prepared to stop short of train or obstruction."

3. Green light displayed: The name "Clear-slow-speed signal" checks closely with "Clear signal" proposed by Mr. Holt, especially when considered with the indications proposed, *i. e.*, "Proceed at slow speed" and "Proceed at authorized terminal speed."

4. Yellow light displayed above red light vs. yellow light displayed below red light. The indication "Approach next signal prepared to stop" checks with Mr. Holt's No. 2 indication.

In my opinion Mr. Holt's No. 2 and No. 4 indications should be transposed, for, although, in the scheme suggested above, the display of a red light in connection with the display of a yellow light gives a more favorable indication, the indication given is along the line of safety, because if the red light for some reason should not be displayed, the lone yellow light will give the more restricted speed indication, whereas, with Mr. Holt's scheme, it will give a less restricted speed indication so that instead of receiving the indication "Proceed with caution prepared to stop short of train or obstruction," the indication displayed will be "Approach next signal prepared to stop." Furthermore, the scheme I propose conforms with what is in use on other portions of the line, *i. e.*, a lone yellow light displayed by a dwarf signal indicates "Proceed at slow speed prepared to stop" and is also in accord with the Standard Code; see Rule 601 G.

F. F. WIEGAND,
Consulting Signal Engineer, Cleveland Union Terminals Company.

## Railway Performance and Business Conditions

NEW HAVEN, Conn.

TO THE EDITOR:

I have no wish to burden your columns with an argument which obviously cannot lead to definite conclusions. However, the following comments may be pertinent as an answer to Mr. Snow's comments on page 972 of the *Railway Age* of November 25. Naturally Mr. Snow has several objections to my statements, but I regret especially that apparently I did not make sufficiently clear the one important point which I believe he overlooked in his freight comparison, *i. e.*, that selected units of performance are not in themselves indicative of either better or worse performance, when made as these have been, under differing business conditions.

The fact that Mr. Snow's basic figures were not all based on the month of July, 1919, 1920 and 1921, doubtless explains the inability to check his figures. However, the fact makes no difference in my conclusions because there were no summer months in 1919, 1920 and 1921 which are comparable one year with another, so far as volume of business offering is concerned, the basis of my argument. It is believed that Mr. Snow feels that comparable months depend only upon weather conditions.

While there was no intention to cast aspersion on Mr. Snow's average cost of 30 cents per passenger car mile, I do, however, challenge his use of that cost figure as applied to the usual business car movement. Of course in such a case as he so humorously describes in his original article where an additional engine was required to handle a train because of two business cars of officers on their way to a fuel conservation meeting, the cost of the movement was far more than 30 cents per car mile. But surely Mr. Snow is familiar with the customary handling of such cars. On all railroads certain trains do not handle their full capacity. There are none more keen than railroad officers not to overload trains with the business cars necessary for their use under the high pressure and heavy load of present day railroad operation.

As there is no additional engine or train crew expense on such trains, these being important elements of expense, there is no possible method of arriving at so high a figure as 30 cents per car mile for the cost of the additional car movement. In fact, in nine out of ten business car movements the additional expense is negligible.

I am unable to follow the reasoning in Mr. Snow's final paragraph where he refers to the futility of ranking football teams by comparative scores, to which I sadly agree. However, my figures on miles per car day did not show what might have been, but indicated the actual performance of freight cars which were in use. On that basis, 1921 car performance was considerably better than that of 1919, although Mr. Snow, because of failure to take into account important affecting conditions, has the contrary view.

DON M. NEISWANGER.

nce did the skies before Thee bow:
A virgin's arms contain Thee now;
While angels who in Thee rejoice
Now listen to Thine angel voice.

little child, Thou art our guest,
That weary ones in Thee may rest;
Forlorn and lowly is Thy birth
That we may rise to heaven from earth.

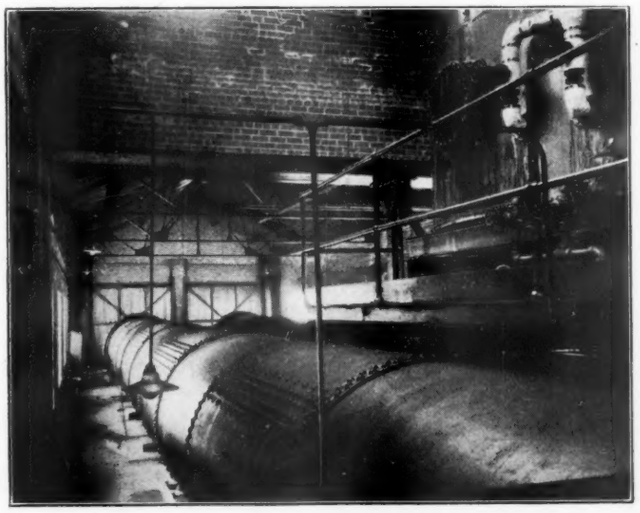
hou comest in the darksome night,
To make us children of the light,
To make us, in the realms divine,
Like Thine own angels, round Thee shine."

*Yard Tracks at Left. The Loading and Crane Tracks in the Background*

# Treating Plant Solves New Haven's Tie Problem

## New Installation at Cedar Hill Renders Possible the Use of Hitherto Unused New England Timbers

THE NEW YORK, NEW HAVEN & HARTFORD has recently started the system use of creosoted ties in order to reduce its present annual requirements and to insure a greater local supply. The treatment is being performed at Cedar Hill, near New Haven, Conn., at a modern plant



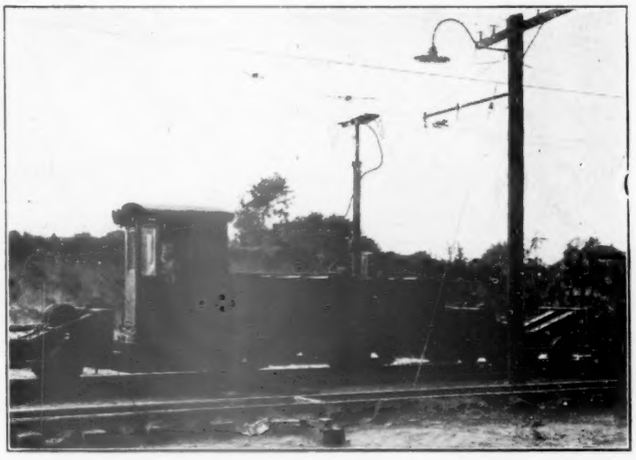
**A Well-Lighted, Well-Ventilated Interior**

built by the American Creosoting Company, Louisville, Ky., with a capacity of 1,500,000 ties annually. Through the adoption of timber preservation, the New Haven has made it possible to utilize many more species of local woods, thus stimulating the timber business in New England, while at the same time securing economy in the maintenance of its tracks.

### New Haven's Tie Renewals Steadily Growing

The new plant, which is the first in New England territory, is located in the north end of the large freight terminal at Cedar Hill and connects with the receiving, classification and departure yard tracks at that end. It is of the most recent design, being of concrete and brick construction with steel sash and superstructure and embodies many interesting features of equipment and operation.

At the present time there are approximately 15,500,000 cross ties in the tracks of the New Haven, the renewal requirements of which have averaged about 2,000,000 annually. With the gradual depletion of New England's more durable grades of timber such as oak and chestnut, the annual needs threatened to increase to 3,000,000 ties. With the treating plant in operation and the consequent use of treated ties at the rate of about 1,000,000 a year in conjunction with the continued use of chestnut, it is expected to reduce



**A Modern Electric Locomotive Handles the Ties**

the yearly requirements nearly to one-half of what they now are.

It is estimated that the supply of chestnut and white oak is sufficient to last from five to eight years more. The inauguration of timber preservation has, however, made it possible to use many native woods such as beech, birch, maple, red oak, ash, hickory and hemlock, the supply of which is sufficient to furnish tie wood for the next 15 to 20

years or more. Much of this timber has not been marketable heretofore, chiefly because of the fact that no one grade grows in sufficient quantity in one location to make sawmill operations profitable. It will now be possible to log a tract of mixed timbers with profit and thus in addition to being an economic advantage to the railroad, the inauguration of timber preservation will provide some measure of stimulus to the timber business of that section.

### General Layout at the Plant

In a general way, the plant consists of a large well-lighted retort house, a boiler and enginehouse, an office building, storage tanks, tie storage yards, an adzing machine building and a system of narrow gage tram tracks over which a modern electric mine locomotive operates. The chief points of interest in regard to this plant are the design of and permanence of construction of the buildings, the arrangement of the equipment and the refinements in detail and improvements in construction of much of the equipment to secure easier and more economical operation.

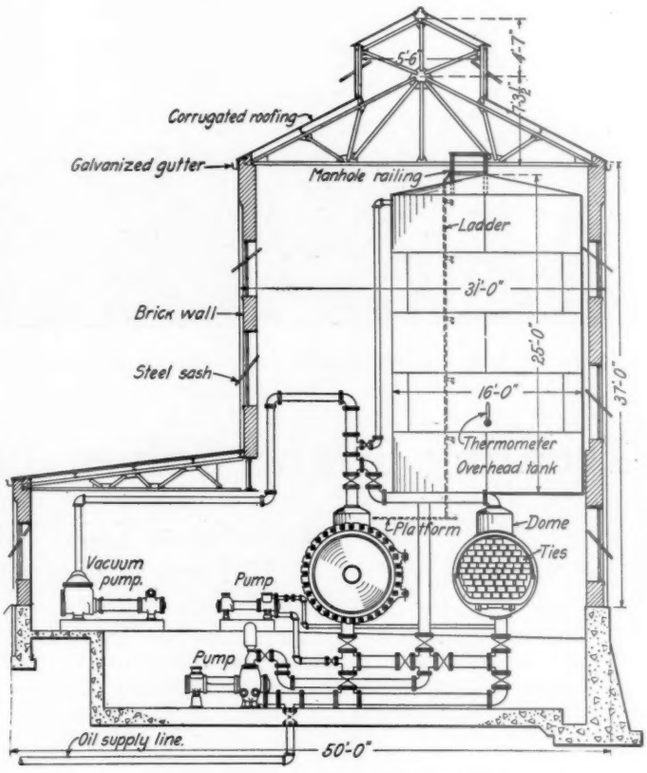
About 47 acres of land have been utilized for the plant and attendant tie storage yard. This tract adjoins the Quinipiac river and the Air Line receiving and northbound departure yards at Cedar Hill. The buildings and narrow gage tracks serving the buildings are located next to the terminal tracks mentioned with the storage yard beyond. When ties are received in a solid train the cars are immediately set in upon receiving tracks at the plant and later distributed throughout the tie yard. In all other cases the cars are cut out in the classification yards and then moved in to the plant's receiving tracks.

### Process Used Is the "Improved Lowry"

The treatment given at this plant is the Improved Lowry process. It differs essentially from the straight Lowry process in that the oil is not dropped to an underground tank on the completion of the pressure cycle and the vacuum then pulled, but the oil is pumped out directly from the retort to the charging tanks and a vacuum pulled at the same time. This gives a bigger recovery and a quicker vacuum. Following this method a vacuum of 15 in. is secured in about 5 min., and of 22½ in. in about 10 min., less time than would be taken ordinarily in draining the retort. A normal working pressure of 175 lb. at a temperature of 175 deg. F. is used and a following vacuum of 26½ in. The average retention for a 6-in. by 8-in. by 8½-ft. tie is 2½ gal. and for a 7-in. by 9-in. by 8½-ft. tie, 3½ gal.

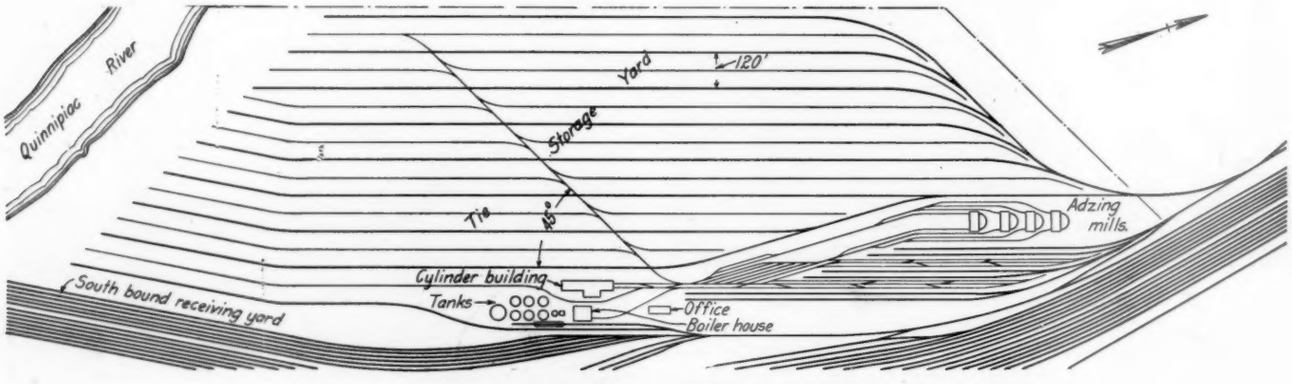
### Electrically Operated Narrow Gage System

The tie storage yard consists of a series of alternate narrow and standard gage tracks having an average length of about 2,400 ft. There are nine standard gage and eight narrow gage tracks laid alternately on 60-ft. centers. These standard gage tracks stub end at the river, while the opposite ends are connected through a ladder track with the inbound and receiving tracks and the outbound tracks from the loading docks, etc. A 24-in. narrow gage line crosses the yard at a 45 deg. angle at about the center, connecting with each of the narrow gage yard tracks.




**Cross Section of Cylinder Building**

The layout is arranged to secure an easily controlled movement to and from the retort house, either direct from cars, direct from the seasoning yards or via the adzing and boring mill. To do this the cross lead is connected in to the main leads to and from the retort house which in turn connects with a six-track narrow gage storage yard, the adzing mill tracks and the two three-track sets of loading tracks, as shown. All narrow gage tracks have an overhead catenary, furnishing power to an electric locomotive for handling the trams. The locomotive is insulated at the retort end to prevent any possible grounding through the retort.



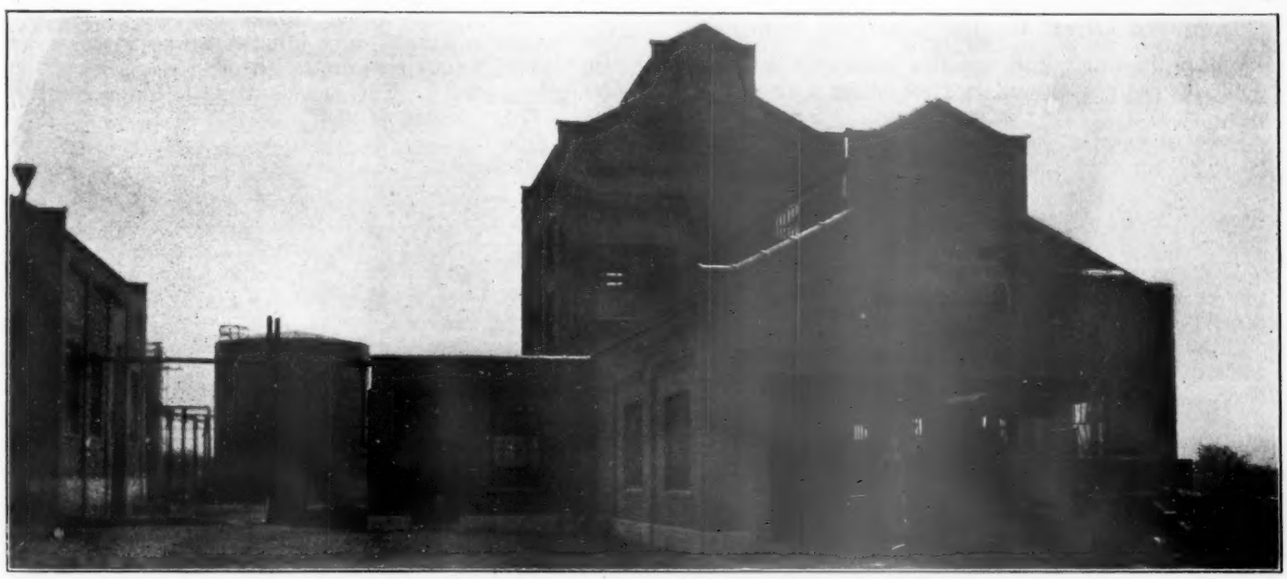

**Plan of the Yard and Building Layout**

The retort house is a modern building of marked permanence of construction as stated. The foundations are of

concrete with brick walls, steel sash windows, steel roof trusses and sheet iron roofing with the exception of a lean-to which serves as an engine and generator room. This has a tar and gravel roof laid on cement tile. The building is 174 ft. 8 in. long and 31 ft. wide with a 19-ft. by 62-ft. lean-to.

It is of the monitor type with a height to the eaves of about 13 ft. The center section, housing the charging tanks, is in the form of a tower measuring 31 ft. by 36 ft. with a height to the eaves of 37 ft. Pilasters in the brick walls are spaced about 17 ft. apart. Large steel sash are installed between each pilaster in the walls of the building proper in addition to which there are two upper lines of sash in the center or tower section. Additional lighting is obtained by an extensive system of electric lights, all housed in vapor-proof fixtures and conduits.

**The Storage Tanks Are Well and Conveniently Arranged**



**The "Working" End of the Retort House**

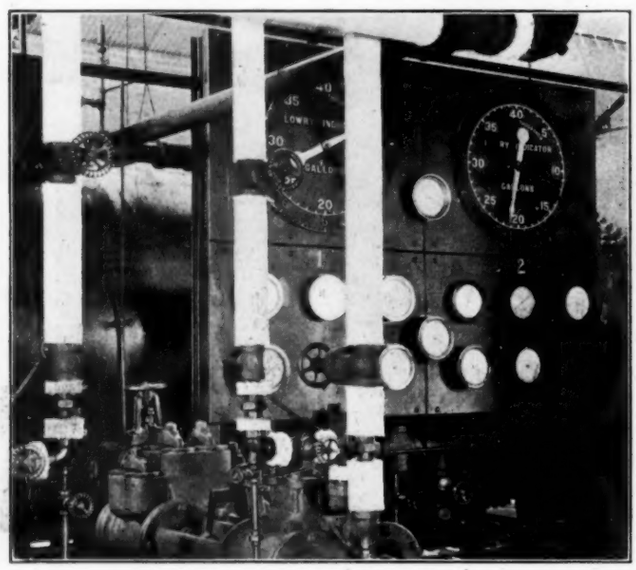
## Retort Heating Coils Reduce Condensation Losses

The treating cylinders are two in number, 7 ft. in diameter by 150 ft. long with a capacity of 18 trams of 8-ft. ties and 17 trams of 8½-ft. ties. They have a ¾-in. shell of triple riveted, butt-joint construction designed for a working pressure of 200 lb. The pitch of the rivets was designed to secure tightness of joints at working pressures rather than high pressure resistance. The cylinders are anchored on two saddles at the center and carried upon roller bearing supports for expansion. The doors are of steel plates with cast-steel rims, thus securing a light construction with no loss in strength or tightness.

The heating coils consist of lines of pipe so arranged as to secure a flow of steam in both directions from a center casting and return with an absence of air pockets and condensation losses. Each pipe line from the central casting consists in reality of two lines, an inner and an outer pipe, respectively ¾ in. and 2 in. diameter. Steam is admitted to the inner line at the center casting, flows through the ¾-in. pipe to the far end and returns through the 2-in. pipe to a separate chamber in the center casting. The installation is covered by a perforated plate and is most satisfactory.

The door rails are controlled through a lever by one man, the arrangement being such that little effort is required to swing them up out of the way or down into place for the

movement of trams. The counterbalance is a compensating one and operates by means of a cable and drum on the supporting shaft, the former passing over a grooved cam controlled by a lever, to a counterweight. Another labor saving installation is two balanced platforms, one for each retort, which drop before the doors to permit the workmen to reach the nuts on the upper half easily and quickly. These platforms are so designed that they will remain safely in



**Two-Pointer Indicators Give Quick and Accurate Readings**

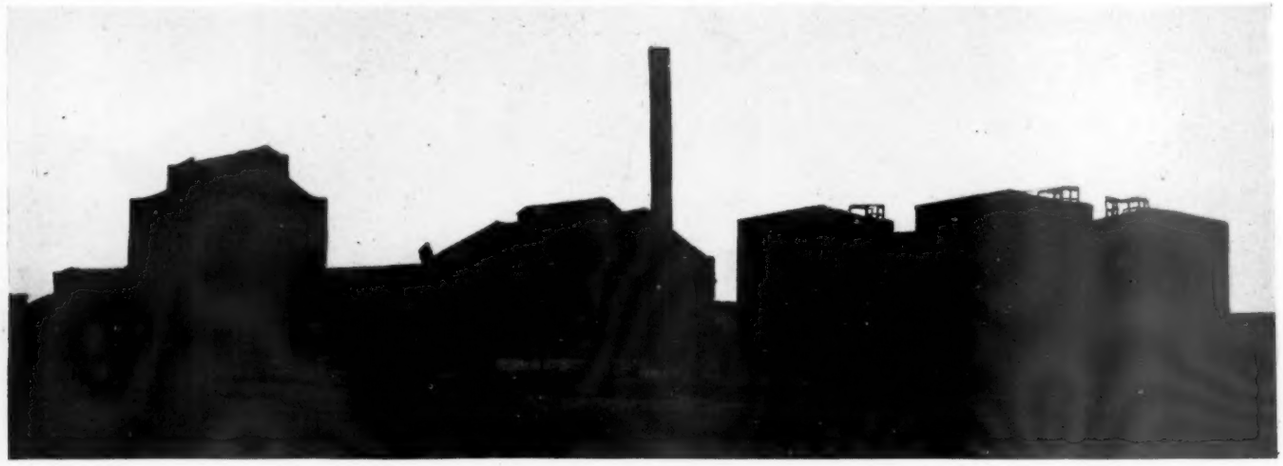
either the raised or lowered position, a force of about 20 lb. being required to start and move them from either of these two positions. Between points of about 3 ft. from either extreme position they are in an almost perfect balance, requiring little or no effort to move them.

### Improved Direct Reading Charging Indicators

A pit in the center of the building houses the pumps which handle the charges, as well as a considerable amount of the

**The Door Rail and Platform Arrangement**

diameter and 25 ft. high, each with a capacity of 37,000 gal. The outside storage facilities consist at the present time of four 30 ft. by 30 ft., 150,000 gal. tanks, with provision for two additional to be installed later. Provision has also been made for a contemplated main storage tank of 450,000 gal. capacity. The outside tanks are connected for



**The Permanent Form of Construction is Clearly Evident Here**

necessary piping. The vacuum pumps are on the floor level and are installed near the retorts. A large indicator board is installed centrally and below this are situated the control valves. An interesting feature of this indicator board are two large gages, one for each charging tank, which are equipped with two hands, one reading by thousands and the other by hundreds of gallons. Subdivisions permit of reading to units of five gallons. This indicator is accurate to plus or minus 20 gal. It is of the float and cable drum type. The thousand-gallon indicator hand is painted white and the other yellow, thus making them readily distinguishable. The charging tanks are two in number, 16 ft. in

heating both by live and exhaust steam from the boiler house. The tanks from which oil is being withdrawn steadily for use are kept at or about a temperature of 120 deg. F. A separate pump house handles oil from a 5-ft. by 100-ft. receiving tank located in a concrete pit under a siding, to the storage tanks and circulates the ingredients in the mixing

tank. The installation consists of a steam driven pump and an electrically driven centrifugal pump, one being held in reserve.

### Modern Equipment for the Boiler House

The boiler house is a concrete and brick building measuring 49 ft. by 62 ft. 6 in. It is equipped with three 150-hp. boilers fed by automatic stokers. Coal is elevated to three overhead hoppers which feed the stokers by gravity. The office building now under construction will be 26 ft. 10 in. by 71 ft. 10 in. in area and of the same general type of construction. It will contain offices for the superintendent and his staff, chemical laboratories, lockers, lavatories, etc. Electric current for the plant is furnished by a 75-kw. generator delivering direct current at 220 volts, located in a room adjoining the retort house and forming a part of it.

Provision has been made for four adzing, boring and branding units, which are now under construction. Each of these units is served by single tracks on both the inbound and outbound sides, the grade of the tracks being such as to insure gravity operation of the trams and the length sufficient to take care of two tram trains on each.

The narrow gage track layout in addition to that already mentioned consists of a two-track storage for inbound tram trains, and a six-track storage yard for adzed ties ready for treatment. This latter yard has a ladder at each end and the switches are interlocked. Two sets of three tracks each on 11-ft. centers are provided for outbound treated ties. One set runs on a loading dock at car door height, the other at grade. Numerous crossovers provide the necessary flexibility of operation. The tracks at grade are flanked by locomotive crane tracks, one 20-ton crane being used at present for the loading of ties into open top cars.

The new plant was constructed under the supervision of the purchase and stores department of the New Haven, N. M. Rice, general purchasing agent, by the American Creosoting Company, Louisville, Ky., A. L. Kuehn, president, and R. H. Mansfield, superintendent at Cedar Hill.

# State Commissioner Urges Constructive Regulation*

## Emphasizes Necessity of Sane Control if Best Interests of the Public Are to Be Promoted

By Carl D. Jackson
Member, Railroad Commission of Wisconsin, Madison, Wis.

MANY PEOPLE BELIEVE that the sole object of the establishment of regulatory commissions was to bring about the reduction of rates to the consumer, and as a matter of fact in the early history of regulation, reduction of rates rather than the exercise of other functions of regulation did absorb a large part of commission activities. While it is true that regulation was first established largely as a protest against abuses and practices which the public had rightfully found to be against the public interest, it is now beginning to be generally understood that regulation must have in mind the fact that its principal purpose is to bring real service to all of the people upon terms not only fair and equitable to the consumer, but also to the utility and carrier furnishing the service. Regulation must proceed in accordance with economic laws, and any system of regulation which hampers or makes impossible the service which the utility was established to perform is not in the public interest but directly opposed to that interest.

The steam railroads of this country perform a service absolutely vital to our welfare. It is probably safe to say that nothing could more adversely affect our welfare or more seriously threaten the very form of government under which we live, than the complete breakdown of our transportation system. The steam railroads are the arteries supplying the vital elements of our life as it is now lived. An unwarranted attack upon transportation affects industrial welfare and the welfare of our farmers and workmen just as vitally as would a direct attack upon industry itself. The situation of the railroads today is such as to demand not unthinking or unreasonable criticism, but serious and constructive consideration. We are today having a practical experience of what inadequate service in transportation means. The present car shortage comes at a time when the demands for transportation service are not nearly what they will be when industry is again in full swing throughout the country. This means that we must bring about conditions that will insure the necessary increase in railroad facilities to keep pace with our industrial development, for transportation limits are also the limits of production. Inadequate transportation facilities necessarily mean the loss or stoppage of business, the tying up of money in both raw materials and manufactured products, frozen credits and the curtailment of available capital for the business of the country. They mean a direct loss and discouragement to the farming community, which after all is the basic industry upon which all of our prosperity is founded. Our present situation is due to a failure to increase our railroad facilities adequately during the last five or ten years, and this failure, of course, is based on a lack of foresight in the past. I shall not discuss how far it may be due to a short-sighted policy on the part of the carriers, to the war, to government control, to restrictive laws like the Sherman Act or how far there may have been a failure to measure up to the full responsibilities of regulation. I do believe, however, that undue emphasis was placed upon the desirability of lower rates and lower prices for service rendered, very often to the exclusion of consideration of those economic conditions and necessities for revenue upon which alone adequate service could be based. The public had not come to realize the full effect of the existing economic policy; and that failure to meet the situation in a far-seeing way during this period was a mere reflection of the general public attitude toward utilities and carriers. But we are faced with a present problem and this demands not only a study of the past but a careful survey of the future. It is far preferable that we foresee and prevent disaster, than that we cure it after it has come upon us.

There is much discontent today, and some of this discontent is focussed on the railroads. Of this latter discontent, much is wholly unreasonable and unreasoned. Very often it is based on an entire disregard or misunderstanding of facts. Here and there we find a tendency to ignore the actual services now being performed by the railroads or a failure to comprehend their importance or meaning to the country. It is true that transportation service is being performed by

*Abstracted from an address before the Chicago Association of Commerce on December 14.

other agencies than the steam roads, but the slightest knowledge of the actual facts would show that the service performed by the carriers is not of less importance today than it formerly was, but on the contrary, that service is greater today than ever before. The increase in tonnage hauled (service performed), has been steady for 30 or 40 years. We are today doing about the same amount of transportation that was done in the banner year of 1920—the greatest year of transportation service in the history of the country. The amount of freight hauled by the carriers in 1920 is almost seven times that hauled in 1890. It is nearly three times that hauled in 1900, and it is over 70 per cent greater than it was in 1910. No prewar year approaches 1920 in the amount of freight hauled by the railroads. There is no reason to expect a decline in the service that must be rendered, and there is every reason to expect a great increase in it; and it is perfectly idle to suggest or think of other forms of transportation replacing or performing the service now performed by the steam carriers of this country. I believe that this will be so even though we take advantage of every economic form of transportation, including waterways, which should be developed.

The facilities for the performance of this service must be available if this country is to prosper and industry is not to be stifled. The problem, therefore, is one of the greatest in this country. In part, at least, the regulatory bodies will be responsible for its proper solution. That means that the regulatory commissions must be courageous enough to regulate as their vision and judgment dictate although it may be contrary to political expediency or public prejudice at the particular moment.

One of the helpful things that can be done is to continue the attempt already started to bring home to every person in the United States the facts in regard to the situation. If in the end these facts can be brought home to the public and the people can be made to understand how their own welfare is dependent upon the proper solution of the transportation problem, there will no longer be any political advantage to that type of politician whose sole stock in trade consists of unreasonable attacks upon the railroads. I believe that every effort should be made to restore better public relations between the railroads and the patrons and shippers. When this is accomplished, a great step will be made toward solving the problem. Also, the people should come to understand that regulation does not consist always of the reduction of rates, that regulation with this sole object in view is not in the public interest and that unwarranted reductions in rates may be directly against their own interests, leading in the end to an increase in our transportation difficulties. Another great help would be an endeavor on the part of the carriers to bring about the ultimate object of the Transportation Act—the elimination of unnecessary, unreasonable or wasteful competition among themselves. As yet no advantage has been taken or perhaps could be taken of the provisions of the Transportation Act permitting consolidation or pooling as a means of doing away with unnecessary or wasteful competition. The carriers should come to think of the transportation system as a whole and as one transportation facility, and not as made up of a heterogeneous number of individual railroads. It seems to me that the wise policy on their part would be the encouragement of co-ordination between their own and other means of transportation, to the end that there should always be available the cheapest, most economic and adequate service possible.

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THE CANADIAN PACIFIC reports that its new line being built between Foremost, Alberta, and Weyburn, is nearly completed, the laying of track on the last 25 miles being now almost finished. The operation of one train each way, three times a week, will probably be begun within two or three weeks.

## A "Y" Building and Loan Asscciation

ORGANIZED on July 1, 1919, and having at the present time—three and one-half years later—over 1,000 shareholders with over 5,000 shares subscribed, is the record made by the P. R. R. Y. M. C. A. Building and Loan Association of Jersey City, N. J. The Association has at the present time over $150,000 in assets and its monthly receipts total over $6,000. It has issued 38 loans, 34 to railroad employees to assist them in the purchase of homes.

The officers and board of directors represent a large number of the departments of the Pennsylvania Railroad organization at Jersey City. The president is A. M. Reynolds, assistant master carpenter; the secretary, M. S. Pine, is chief clerk at the Jersey City freight station; the treasurer, J. M. Watson, is chief clerk at Pier K. Among the directors are the ferry station master, the assistant freight train master, the assistant supervisor of stations, and a captain of a Jersey City-New York ferry boat.

The formation of the P. R. R. Y. M. C. A. Building and Loan Association of Jersey City followed as a result of activities at the Y. M. C. A. in connection with the 1919 thrift week campaign. A committee appointed to consider the best method of making practical the ideas embodied in the thrift week creed decided in favor of the building and loan plan which has proved extremely popular in the state of New Jersey, that state being among the leaders in the country from the standpoint of number of building and loan organizations, number of shareholders and total assets. The committee at once consulted with an attorney, a state charter was obtained and the organization started its activities on July 1, 1919, with 50 members who subscribed for a total of 500 shares. On its first anniversary the association had 400 members with a total of 2,040 shares; on its second anniversary, 518 members with a total of 3,406 shares. The third year shows the organization as having over 1,000 members who have subscribed for over 5,000 shares.

The adoption of the building and loan plan of thrift was agreed upon because of the greater profit accruing to the members with the same degree of safety as prevails in a savings bank. An additional incentive is contained in the plan because each subscriber is required to pay in each month $1 for each share. The share matures in about 11 years, depending upon the conditions, and is then worth $200. Loans to prospective purchasers or builders of homes are made on a first mortgage and on a much higher percentage of the house's value than is usual with ordinary first mortgages. The borrower takes out shares in proportion to the amount of his loan, and then proceeds to pay off his loan in monthly installments by paying on his shares. Thus if he is loaned, say, $2,000, he is required to have 10 shares. He then pays $10 a month on his shares and $10 interest, and his loan, if held to maturity, will be paid off at the end of approximately 11 years as mentioned above.

The officers and directors of an association are elected annually by the shareholders, these men being responsible for the loans made to prospective home purchasers and for other investment of the funds. The officers and directors besides being close to the rank-and-file of the members, must be deeply interested in the welfare of the association and also shareholders to enable them to hold such office in accordance with state laws. The association is further protected by having the accounts of these officers inspected and audited at least once a year, as in the case of banks. In New Jersey also all building and loan associations are under the direct supervision of the state banking and insurance commission. The associations pay 7 per cent, or better, to the shareholders as compared with 4 per cent paid by the savings banks. In New Jersey the degree of success of the plan is indicated by the fact that there are at present in the state over 1,100 associations with over 1,000,000 subscribers and with assets approaching $500,000,000.

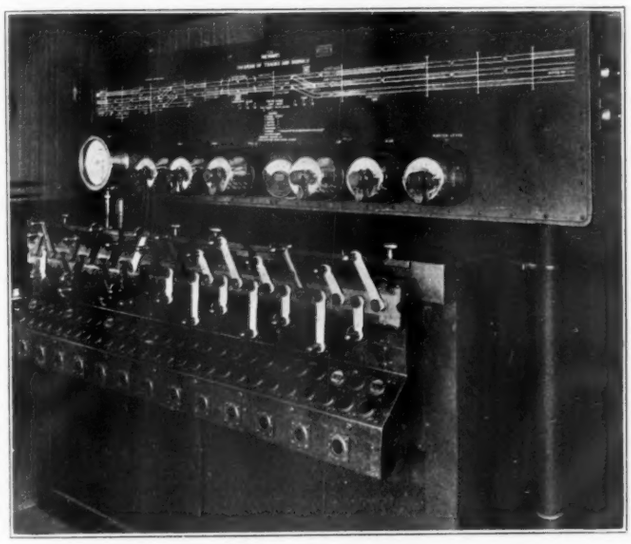
# Traffic Direction By Signal Indication on D. L. & W.

## Current of Traffic on the Meadows Line Is Authorized Only by Interlocking Block Signals

THE DELAWARE, LACKAWANNA & WESTERN delivers over 60,000 people every week day to its Hoboken terminal. These are, to a large extent, commuters who take the Lackawanna ferries or the Hudson & Manhattan tubes from Hoboken to various terminals in New York City. In the evening, the commuters are returned to their homes throughout a considerable section of northern New Jersey. Two hundred and fifty scheduled trains are run on week days and 108 on Sundays. To handle traffic of this nature safely and without delays forms one of the greatest problems in modern railway operation.

### Track Facilities and Interlockers

The Hoboken terminal has 16 platform tracks. Two large electro-pneumatic interlocking plants, control train movements on the six through tracks, converging to four tracks through the Bergen tunnel. Three of the last mentioned tracks are signaled for traffic in both directions, thus allowing four tracks to be utilized for traffic in a single direction during portions of the day when this is advantageous.



**Interlocking Machine and Track Model at Newark, N. J.**

An electro-pneumatic interlocking at West End controls train movements to and from Bergen tunnel and the junction of the two main lines—one four-track westward towards Boonton, and one three-track leading southwest to Morristown, Montclair and Gladstone. Practically 80 per cent of the passenger traffic is handled over the latter line, while most of the freight trains are sent over the former, largely because of extensive yards and other facilities which are located at Secaucus.

The signaling which has been installed recently extends from West End interlocking to Newark interlocking—a distance of 5.9 mi. The accompanying track and signal plan indicates, to some extent, the nature of this work. Electro-pneumatic interlockings were installed in place of the older mechanical plants at Hackensack drawbridge, Kearny Junction, Harrison and Newark. A mechanical interlocking plant which was in service at Passaic drawbridge was reduced in size so that it now handles only a freight lead occupying the lower deck of the bridge, while the units governing train movement over the double track on the upper deck are controlled and operated from the Newark interlocking machine.

The four tracks from the tunnel through West End interlocking converge to three and then to two, which pass over Hackensack drawbridge. Three tracks are provided from this drawbridge through Kearny Junction and Harrison interlockings to within about 1,600 ft. of the Passaic drawbridge. The double track over this bridge joins to three tracks at the west end, this junction being handled by the Newark interlocking. Tracks 1 and 3 are signaled for traffic in both directions; track 2 has signals for eastward trains only. The changes in the number of tracks and reversals of normal direction of traffic necessitate the interlocking of switches and signals throughout this section.

Through passenger and suburban express trains pass through the newly signaled zone without stopping, and usually at speeds of from 30 to 50 miles an hour. Some of the local suburban trains stop at Harrison station, between Harrison tower and the Passaic river. No other regular stops are made. Freight trains are moved into and out of Harrison yard, and freight cars are delivered to industries west of Hackensack draw, near Harrison, and in Newark. Movements are also made from the main tracks at Harrison to the lower deck of Passaic drawbridge. Interchange tracks connect with the Pennsylvania at Kearny Junction.

A record taken on an ordinary week day showed 228 trains in 24 hr., or one train for each 6⅓ min. in one or the other direction on one of the three tracks. As a matter of fact, these trains are bunched so as to require that they run on the same track with the headways from two to six minutes during the rush hours at morning and evening. For an average length block (1,930 ft.. from which the variation is not great), trains operated on a two-minute headway must run at:

36 miles an hour on "clear" signal indications;
25 miles an hour on "approach restricting" signal indications; and
14.3 miles an hour on "approach" signal indications.

### Opening Drawbridges Interrupt Schedules

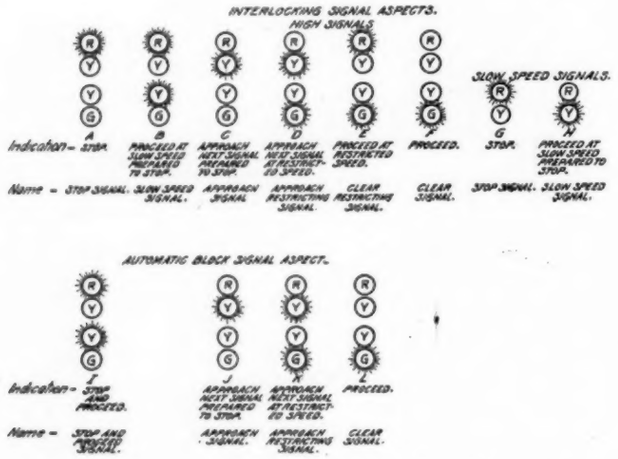
Freedom from traffic congestion cannot be secured on this section of track by even the most careful adherence to the schedules for trains or the most perfect train dispatching, as the drawbridges at the Hackensack and Passaic rivers must allow uninterrupted boat traffic in accordance with the government marine regulations. Occasionally this interferes seriously with train operation, especially when a bridge is opened during rush hours. The trains on from two to six minutes headway will close in and occupy from a half mile to a mile of track, waiting for a bridge to be closed. To witness the rapidity with which the road is freed of congestion of this nature will convince one of the necessity of providing the most complete signal facilities.

Trains can be operated eastward on three tracks or westward on two tracks simultaneously. It is not so essential that westward trains, which are just starting on their runs, be kept exactly on time, as it is that eastward trains be not delayed, as the latter are approaching the terminal and have boat and subway connections to make. With signals 1,930 ft. apart a train can follow a train safely at a headway as low as two minutes. As a result of the signal facilities provided, 95.3 per cent of the eastbound trains have been

normally reaching the terminal on time, in spite of unavoidable drawbridge delays.

### Changes Required to Handle Traffic

Ten years ago there were only two tracks across the Meadows and traffic on these was protected by two-position, two-arm semaphore signals, spaced approximately 3,500 ft. apart. The number of trains increased until there was a serious traffic delay in normal operation, so that it became necessary to cut the blocks in half, making these about 1,750 ft. long. To be safe, it was necessary to have two caution signal indications for each stop indication. As traffic increased, a third track became necessary and a system of signals was installed with this which provided for the first time on the Lackawanna a differentiation between "approach" and "approach restricting" signals. A comparison




**Interlocking and Automatic Block Signal Aspects**

of the interlocking units and automatic signals before and after the addition of the third track and subsequent changes is indicated in the tabulated form below:

### Old Layouts

| | Intlg. Levers | Oper. Units | Sigs. | Sw. and Derails | F. P. L. | Other Locks |
|---|---|---|---|---|---|---|
| Hackensack draw | 12 | 12 | 5 | 3 | 2 | 2 |
| Kearny Junction | 41 | 35 | 18 | 8 | 9 | .. |
| Harrison | 25 | 25 | 15 | 4 | 5 | 1 |
| Newark draw | 17 | 17 | 6 | 4 | 4 | 3 |
| Newark | 20 | 13 | 8 | 2 | 3 | .. |
| Automatics | .. | 31 | 31 | .. | .. | .. |
| Total | 115 | 133 | 83 | 21 | 23 | 6 |

### New Layouts

| | Interlocking Levers | Working Levers | Operating Units | Ground Signals | Bridge Signals | Dwarfs | Switch and Draws | Switch and Bridge Lock | Traffic Levers |
|---|---|---|---|---|---|---|---|---|---|
| West End (added) | .. | .. | 5 | .. | 1 | 2 | .. | .. | 2 |
| Hackensack draw. | 19 | 15 | 23 | .. | 4 | 1 | 7 | 2 | 5 |
| Kearny Junction.. | 19 | 15 | 33 | 2 | 3 | 5 | 14 | .. | 4 |
| Harrison | 23 | 22 | 47 | .. | 9 | 9 | 15 | 1 | 4 |
| Newark draw | 8 | 8 | 8 | 2 | .. | .. | 2 | 4 | .. |
| Newark | 27 | 20 | 28 | .. | 8 | 1 | 7 | 1 | 3 |
| Roseville Avenue | .. | .. | 1 | .. | .. | .. | .. | .. | 1 |
| Automatics | .. | .. | 43 | 7 | 36 | .. | .. | .. | .. |
| Total | 96 | 80 | 188 | 11 | 61 | 18 | 45 | 8 | 19 |

### Color-Light Signal Aspects and Indications

The adoption of color-light signals for the Meadows installation is a departure from past practice on the Lackawanna. Interlocking and automatic signal aspects and indications are shown in the accompanying sketch. This general scheme of aspects not only provides for closing in of traffic safely by qualifying the "caution" indication, but has also reduced the number of indications formerly used from

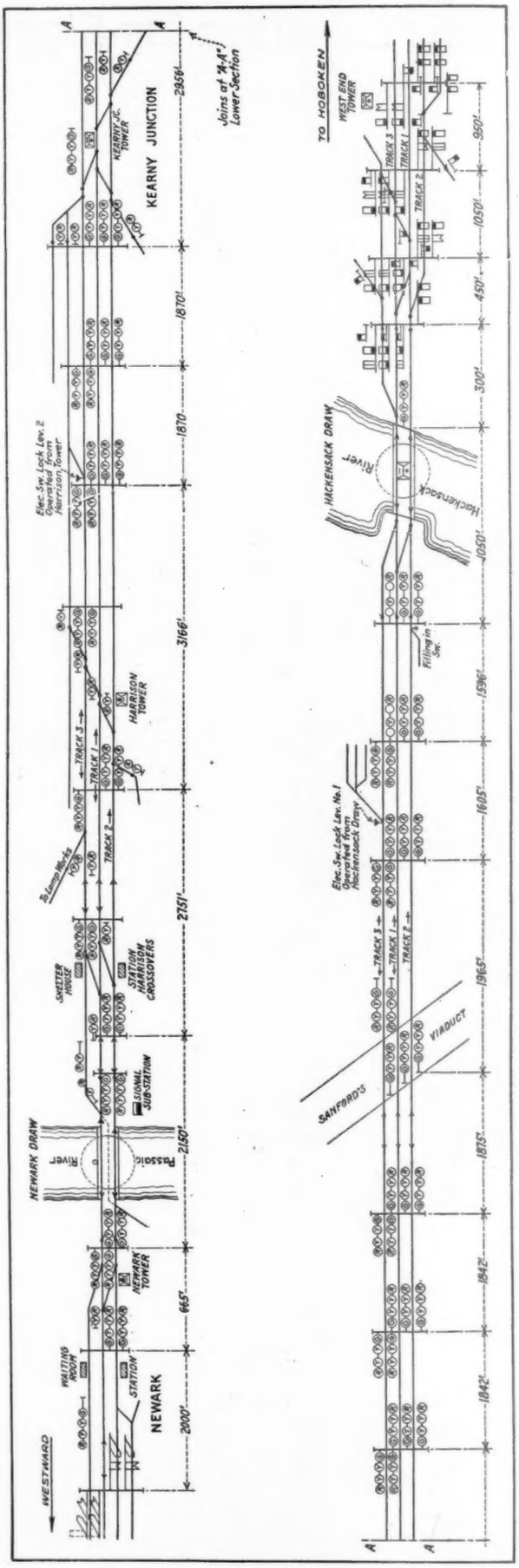
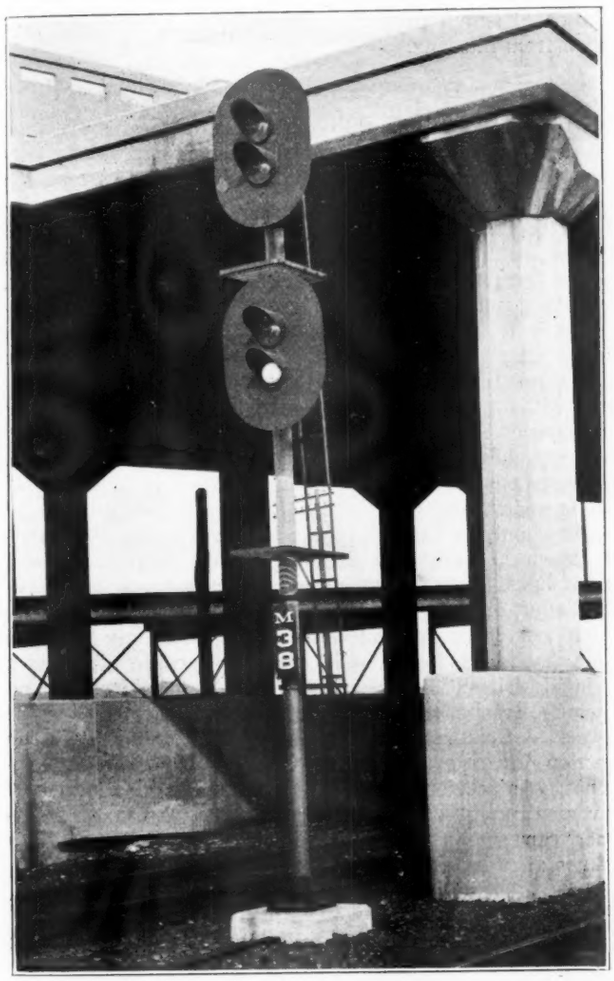



**Diagram Showing Color Light Signals Between West End and Newark—Upper Section Joins Lower at Left**

36 to 12. A number of dwarf signals, required by the older scheme, at the base of high signals, have been eliminated.

The greatest variation from past practice in signal indications exists in the introduction of the aspect *D* and *K* which indicates "approach next signal at restricted speed." Thus a "stop" signal, *A*, or a "stop-and-proceed" signal, *I*, will be preceded by an "approach" signal, *C* and *J*, before which will be an "approach-restricting-signal" *D* and *K*. This arrangement provides for signals to be spaced less than braking distance apart and yet allows trains to be run at maximum speed. Trains at lower speeds may close in, one train following another under the indication shown in *C* and *J*. This system furthermore provides, where desired, a "tonnage" signal which is unnecessary on this section as no train is operated which cannot regain headway after having come to a stop at any of the signals.



**Two-arm Style-L Ground Signal at Sanford Crossing**

### Control of Train Movements by Signal Indication

Train dispatchers at Hoboken direct all train movements over this stretch of track. Three levermen, but no directors, are employed at each of the following towers: Newark, Newark drawbridge, Harrison, Kearny Junction and lower Hackensack drawbridge. Telephones and train describers are used between towers to facilitate train operation.

The bulletin placing the Meadows signaling in service contains the following provisions: *"Current of traffic will be authorized only by interlocking block signals. Enginemen will receive signal indications as per track assignment."* In other words, traffic direction is provided by signal indication. The direction of traffic may be changed as required by operating conditions.

Under such conditions the levermen obtain a release from the adjoining tower on the proper traffic lever and reverse the desired signal levers.

### Regular and Emergency Power Supply Provided

The regular source of power supply is the railroad company's 6,600-volt, 3-phase, 60-cycle transmission line, which extends across the Meadows and from which taps are taken at two places, Hackensack drawbridge and Harrison sub-station, just east of the Passaic river. Normal connection is made at the Harrison sub-station. An emergency supply is provided by the public service, 2,400-volt, 2-phase, 60-cycle line, which is converted to 3-phase and the proper voltage by the use of scott-connected transformers.

The emergency supply of power is cut in automatically at any time when there is a failure of the normal supply, through the agency of a General Electric automatic sub-station. The time required for a complete change-over is approximately one-half second. Circuit controllers are interlocked in such a way as to prohibit single phasing. The change-over is effective not only upon the failure of normal supply, but also whenever the secondary voltage falls as low as 95. Restoration of the connection to the normal supply is made manually.

The three 6,600-volt transmission wires are carried on the same poles as the power department line of the same voltage. It will be noted that it was necessary to use aerial cable at Sanford's Crossing, and submarine cable under the Passaic river. With the exception of these two locations, transmission wires are carried on porcelain insulators. Nineteen 5-kva. transformers provide for the entire signal load. Those transformers are located on the line poles and are protected by means of General Electric compression chamber lightning arresters and choke coils.

The signal transmission line is sectionalized at Sanford's Crossing, Kearny Junction and Harrison towers, at which points air-break sectionalizing switches are used. In sectionalizing, any of the locations mentioned can be fed from either direction. This allows for opening a section of transmission line for repairs without suspending service at any interlocking. Arrangement is provided for the Newark interlocking to be fed from either the signal transmission line or from the railroad power department line.

### Energy for Interlocking Plants

The arrangement for the supply of energy to the interlockings is remarkably simple. In the first place, no battery is required as all parts except track circuits are arranged for alternating current supply. There being no battery, no charging equipment is required. The air compressors are Westinghouse (National) type H-1 with a rated piston displacement of 12.2 cu. ft. of free air a minute. The motors are 110-volt, 3-phase, 60-cycle, developing a maximum of 2 h. p. A simple centrifugal motor clutch enables the motors to start easily without a load. An automatic controller provides for a cut-in cut-out at 45 lb. and 60 lb. respectively. Two compressors were installed at each of the Newark, Harrison and Kearny Junction plants, while there is but one at Hackensack drawbridge. The average consumption of air at each plant is less than 2½ cu. ft. of free air a minute. The compressors run approximately 20 per cent of the time. This low requirement of compressed air is brought about by the use of modern electro-pneumatic apparatus.

The supply of energy is so simply arranged that it was not considered necessary to install switch boards. The knife switches for controlling supply to the air compressor motors, the interlocking machine, and plant are suitably mounted in safety panel-boxes attached to the tower wall.

The Union Switch & Signal Company's Model 14 power

interlocking machines at all four plants are similar. Taking the Harrison machine as an example, there are:

8 levers for 15 switches
9 levers for 27 signals
4 traffic levers
1 lever for outlying switch lock

22 working levers, total
1 spare lever

23 lever machine.

It will be seen that 22 levers handle 47 units. This interlocking machine is less than 6 ft. long and its levers can be easily manipulated by one man, an economical factor where traffic is so heavy.

The indication and lock magnets are energized at 110 volts, 60 cycles. All switch levers are equipped for electric detector locking. Traffic levers have a signal lock magnet. All signal levers are three-position. A 3-light lever indicator cabinet extends the entire length of the machine. Green roundels are used except for the bottom row of lamps under signal levers, which are equipped with red prism glass for a special signal indication. The lever lamps are 12-volt. Push buttons of the mechanical stick type are provided for all signals. Mercury time releases operate in conjunction with dwarf signal levers. One push buttom is provided for controlling air whistles located on the signal bridges, with which trains can be stopped in emergency. Also with the whistle a maintainer can be called to a nearby 'phone from any location.

The interlocking machine is self-contained and is completely enclosed in an enameled sheet steel case which has removable panels. The panels are equipped with cabinet locks which prevent access to the machine by other than authorized persons.

### Track Models Show Location of Trains

Track models are provided for all of the power interlockings. These are of sheet steel mounted on angle iron frames and supported from the floor on 2-in. pipe posts. Tracks, letters and figures are in white on a flat background. This combination in non-reflective finish is the clearest and best when spotlights are used to indicate track occupancy. Twelve volt telephone type lamps, behind frosted bull's-eyes, indicate by their illumination that trains are not on the various track sections. Because of the short length blocks and consequent brief interval of time for indicating a train approaching a signal, a four-block indication is provided approaching home signals.

The track models are located directly over the interlocking machines, and so provide a location where recording air gages, ground and phase indicating lamps are most readily discernible, and where train describers and clockwork time releases are easily accessible.

### Switch Movements

Type A-1 electro-pneumatic switch movements are used exclusively. This movement is equipped with a cylinder having a 12-in. stroke and of sufficient capacity to handle any switch, slip, derail or frog points at 40 lb. air pressure. The switch movements are controlled by means of Style "C" cutoff type valves. The combination of reduced air pressure and normal cutoff of the air supply to the switch cylinder at the valve, results in a very considerable saving of compressed air, as is indicated by the small size compressors.

### Color-Light Signals Prove Advantageous

Union Style "L" color light signals are used throughout. The aspects and indications have been described and the construction as well as the mounting of these signals is clearly indicated in the accompanying views. The long range of this signal is secured by the use of an accurately based concentrated filament lamp. Provision is made for this lamp burning out and the short range indication improved by a pilot lamp which has an ordinary filament. Individual lamp transformers make possible relay control at 110 volts and the use of a rugged filament 6-volt lamp which provides long life.

The colors used in the lenses are darker than the Signal section A. R. A. standards, thereby providing satisfactory range without any filtering out of the colors, which might otherwise accompany the use of concentrated filament lamps. As a result of a number of tests, a minimum spacing of 4 ft. was established between signal units which might be illuminated simultaneously. This spacing gives ample protection from blurring.

### Why D. C. Track Circuits Are Used

Anyone not familiar with all of the factors which were considered in laying out this installation might wonder why with all other units dependent upon alternating current, the track circuits were allowed to remain battery fed. The possibility of this portion of the Lackawanna being electrified at some future time, and the uncertainty at this time as to whether the propulsion current will be alternating or direct, prevents a final determination as to what track circuit apparatus will ultimately be required. Direct current track circuits were in use prior to the present installation and so were allowed to remain. All of the new apparatus will apply without change after the road is electrified, no matter what type of electrification is used.

All switches leading to the three-track line, excepting two, are power operated. These two are controlled by means of electric switch locks for which levers are provided in the Harrison and Hackensack interlocking machines. At Harrison interlocking, lever 2 is moved to the right to allow a train to pass from the siding to the main track, and lever 2 to the left allows the reverse of this movement. The electric switch lock levers are interlocked in such a way with the traffic levers as to prohibit conflicting train movements. Train describers are provided between the Newark and Roseville avenue towers, the latter being located west of Newark. Communication between Hackensack, Kearny Junction, Harrison and Newark towers is by means of telephones. As previously stated, telephones are also located at convenient points throughout the installation so that a maintainer can get in touch with a leverman within a few minutes after hearing the call whistle.

### Check Locking Provides Protection Against Conflicting Train Movements

It is obvious that some means of protection against conflicting train movements on tracks signaled for traffic in both directions must be provided. Check locking is in service between adjacent towers throughout for both tracks 1 and 3. The interlocking signal levers governing train movements on tracks 1 and 3 are interlocked with the check locking levers, the latter being controlled through track repeaters in such a way that once traffic direction is established, and a train accepts a clear signal, this cannot be changed until the train has reached the next interlocking plant and it is safe for traffic to be reversed. The automatic signals between towers are wired as they would be for one-way traffic, that is, no preliminaries are provided, as would be necessary in single track operation without check locking.

The automatic signal and interlocking materials were supplied by the Union Switch & Signal Co., and Kerite insulated wire was used. The entire installation was made by the signal department forces in the employ of the railroad company.

# Revision of Transportation Act Suggested*

## Less Labor Standardization, Changes in Labor Board and Less Restrictive Regulation Needed

By W. G. Besler
President, Central Railroad of New Jersey

THERE ARE TWO schools of thought today, each with its very fixed opinions: one, that the Transportation Act should be revised; the other, that it should not be revised, but should be given a further trial.

Most of the criticism and dissension has to do with that part of the act dealing with disputes between the carriers and their employees and subordinate officers. In the opinion of many, the Labor Board made a fundamental error in including the craftsmen of all classes and descriptions, as well as laborers of no class or description, as employees coming within the category of "railroad men." They undertook to standardize for the railroads of this country, wages and working conditions for 500 classes of employment.

I am firmly of the opinion that this was beyond the thought of those responsible for the framing of the Transportation Act and I further believe that either the Labor Board should now reconsider and revoke its action in this matter, disavowing further authority or jurisdiction therein, or else that it should be accomplished by congressional direction, because the situation as it exists constitutes an unjustifiable subsidy to labor which happens to be in the service of the railroads; and for the further reason that this standardization unsettles for the country at large the wages and working conditions of craftsmen employed in industries other than railroad service, most of whom are of an apprenticeship that can be and is readily interchangeable with craftsmen of similar apprenticeship and training engaged in outside industrial service. As a matter of fact, such interchange is constantly taking place.

Years of service, capacity and training count for nothing. No one will seriously argue that the novice is immediately worth the wages paid to the former trained employee. It is this curse of holding men down to the level of the poorest and least efficient to which I object. It removes all incentive.

### Enforcing Awards of Board

The suggestion has been made that "teeth" should be inserted in the labor section. Teeth are all right in their place, but there are false teeth as well as real teeth. I prefer another methods of approach.

No one is required to accept employment in the more than quasi-public service of railroad transportation. If, therefore, a person enters train or engine service or any kindred occupation having to do with the actual movement of traffic, he must voluntarily agree as a prerequisite condition of such employment to surrender his right to terminate his service under conditions which actually, or may in consequence thereof, result in a cessation of service, being in its practical aspect a strike, and that further as a prescribed penalty for violation of such voluntary agreement, he may subject himself to fine or imprisonment, upon the theory that a man who "saws off the limb upon which he is sitting" does so with the full knowledge of its possible subsequent effect upon himself. Is there anything wrong or insuperable in such a suggestion?

There seems to be an ever-increasing sentiment to the effect that the Labor Board should be abolished. Mr. Lee, president of the Brotherhood of Railroad Trainmen, is reported to have said that he longed for the good old days when railroads and organizations sat around the table and threshed out their differences and made agreements. Such a situation, of course, does not contemplate any necessity for a labor board. In those days, when the situation around the table reached a deadlock the next step was arbitration, concerning which we have ample precedent, with results which were just as satisfactory and at least in some respects more so than have been secured through the medium of the labor board.

### Should Labor Board Be Reconstituted?

In my opinion the Labor Board, as at present constituted, cannot function properly. I would prefer one representative of labor, one of the carriers, and three of the public; or, if a larger committee is desirable, it might be 2, 2 and 5. In selecting the 3 or 5 representatives of the public, as well as the other members, something in the nature of a civil service examination, showing fitness or capacity, based upon previous training and experience along lines which qualify them to service in such a position, should be a prerequisite to appointment. Is there anything wrong in the thought that the law should require that those who are to serve the public in places of such importance should qualify as to their fitness, inasmuch as we require a prescribed course of study and training, followed by a final examination, before a diploma or license as a certificate of competency is given to a doctor, a lawyer, a minister, or even an undertaker, permitting them to practice their professions, and as a safeguard against "quacks" with their nostrums or unqualified persons who might otherwise practice or visit their schemes upon the public?

### Changes in Section 15-A

Should the Transportation Act be amended so as to make the so-called "guaranty" provision, contained is Section 15-A, more effective? At the outset, it should be understood that the Transportation Act does not contain any guaranty provision which is now in effect. The so-called guaranty provision contained in Section 15-A of the Transportation Act cannot be made more effective by any rate-making device; it could only be made truly effective by taking money out of the public treasury. That course is obnoxious. The railroads don't need to be, and they don't wish to be subsidized by the Government. What they want is more freedom from regulation, more opportunity for private initiative and economies that flow therefrom, more opportunity to take care of themselves.

What the railroads need is a legislative holiday. If the regulatory statutes were permitted to become stable so that railroad managements of the country might have some assurance of the rules under which they might operate during the next five or ten years, they would then be in a position to give better service to the public and take better care of their stockholders, subject, of course, to reasonable regulations which would prevent excessive charges and discriminatory practices.

There is now pending in Congress what is known as the Newton Bill (H. R. 11822) which has been endorsed by the National Industrial Traffic League, representing practically all of the large shipping interests of the country. It pro-

*Abstracted from an address before the St. Louis Railway Club at St. Louis, Mo., on December 8.

poses that Section 15-A be amended by substituting for the present rate-making rule, the simple statutory declaration that the carriers are entitled to the opportunity of earning a fair return upon the property they devote to the public use and that the commission shall give consideration to this right in passing upon their charges. This right is already well established at common law by the decisions of the United States Supreme Court, but it has seemed that it had been overlooked at times in the past. It may be desirable that this right be clearly described in the act and thus formally kept before the eyes of the commission.

It is the opinion of a great number whose views are worth while, that Section 15-A as a whole, containing the so-called six per cent guaranty provision and the so-called recapture clause, should be eliminated from the law. Both of these were innovations introduced into the law in 1920. They have accomplished no good, but they have caused a great deal of confusion of thought and the sooner we get away from them and leave a greater freedom to the responsible officers charged with the management of the railroads of the country, the sooner we will get back to that efficiency of operation which made it possible for the railroads as a whole, prior to the war, without the assistance of the government, to earn a return approaching six per cent, while at the same time providing more satisfactory service to the public than it has enjoyed since 1917.

In my opinion, Section 15-A should, and I believe ultimately will, be eliminated. In place thereof, I suggest there might be substituted two rules or principles for the performance and observance of which the Interstate Commerce Commission should be charged with the duty, as well as with direct and personal responsibility in the matter of securing the desired results: (1) The rates charged by the carriers for their service must be reasonable. (2) The service given to the public must be adequate and satisfactory. Neither of these propositions contains anything insuperable. The first contemplates that the rates must be sufficient so as to enable: (a) The payment of wages which are fair; (b) Provision for those other operating costs which are incurred in honest, efficient and economical management; (c) Provision for the payment of fixed charges, taxes, etc., and (d) Permission for at least a reasonable return upon the capital invested.

The second will, as a corollary of these reasonable charges which the public must pay (for the railroads have no other source of revenue, or article for sale than service), result, as the natural consequence of the first being assured, in service both adequate and satisfactory.

## Senator Brookhart Attacks Railroads

WASHINGTON, D. C.

SMITH W. BROOKHART, the new senator from Iowa, made his first speech in the Senate on December 18 in support of a motion to displace consideration of the ship subsidy bill to proceed with the immediate consideration of the agricultural marketing bill. He took occasion to criticise the railroads and the transportation act in arguing that the collective thought of the people had decided "that governmental aid to private enterprises for profit is fundamentally wrong and that present economic conditions are disastrously oppressive to agriculture and in a large measure are produced by improper laws and unwise governmental action. "One of the best illustrations in support of this conclusion," he said, "is the transportation act," which, he said, has changed the basic rule of rate-making so that "the paramount rights of the public are eliminated." Among the statements he made to the Senate, a large part of whose members voted for the act and presumably know what it contains, was that the Interstate Commerce Commission is "now commanded to levy rates high enough to yield a return of 6 per cent upon a valuation of $18,800,000,000 and for the first six months the deficit was guaranteed out of the Treasury of the United States." If the farmers could have had a like guaranty during the first six months of their deflation, he said, it would have saved them seven billions of dollars. He contrasted what he called a "guaranty of a half billion dollars to eight thousand millionaires to keep full the measure of their war profits" with a guaranty of the cost of production of seven million farmers for a crop produced at the command of their government. "For the next year and a half," he said, "the commission was commanded without discretion to levy rates that would pay all operating expenses and yield a net return of 6 per cent upon the full valuation." This it tried and failed because the operating expenses climbed up to the sky and the common people went broke and were unable to pay the bill upon any rates whatsoever. Since then the rate has been reduced to 5¾ per cent, and if the farmers and laboring people ever get money enough it will all be collected.

"The valuation of $19,000,000,000, round numbers, as the basis of rates is unjust. It was made under the rules of this law. This is the first time that watered value has been legalized. We have always had watered stocks and watered bonds, but they had to shift for themselves. This watered value is now given the sanction of the law and it will cost the American people $400,000,000 per year to pay the return upon it. This law should be repealed and the water punched out by the simple provision that the value shall not exceed the market value of the securities.

"The railroads are now getting over $10,000,000,000 of their capital at less than 4½ per cent. Under this law we must pay them 5¾ per cent, or a bonus of about $150,000,000 per year. It is unjust and the law should define the adequate or reasonable return, so it shall not exceed the interest rate on the bonded portion of the capital. Other gigantic items are excessive profits of subsidiary corporations and the waste of competition. These certainly amount to several hundred million dollars per year. Altogether, there is an excessive charge upon the American people of perhaps more than $1,200,000,000 per year without considering the wages of any man that works.

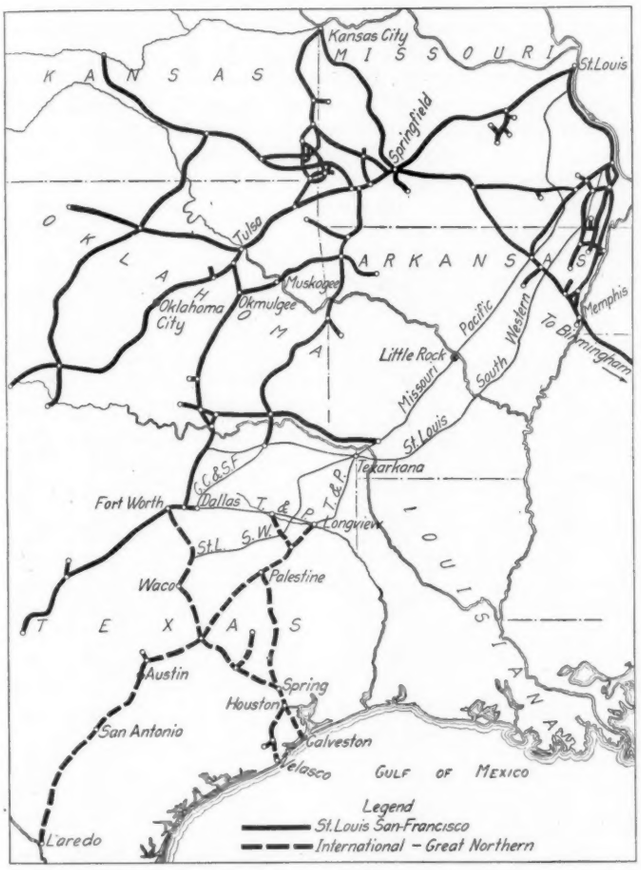
"I have not taken up the railroad law with the view of discussing it in full detail, but only for the purpose of showing that under this law the government itself has imposed these excessive burdens upon the American farmer and is, to that extent, to blame for his present plight, and I want to include this part of my statement with a review of the psychology that produced this law. The roads were being operated by the government. I do not question the integrity of the director general. But down below him, perhaps below his possible personal touch, were managing officers who were neither loyal to him nor to the government of the United States. They served the private owners of the railroads, and they wanted to discredit government operation so the roads would be turned back. They were traitors as truly as Benedict Arnold. They deliberately muddled and mixed up the service. They hired excessive numbers of inefficient employes and paid them excessive wages for the deliberate purpose of increasing the operating expenses. They advertised their own crimes as the evils of government operation.

"They created a general sentiment and demand for a return of the roads to their private owners. With it they coupled the demand for this law. In spite of the disloyalty and inefficiency in government management, in spite of the increased and unnecessary expenses, the first year after the roads were turned back, the private owners further increased the operating expenses by over $1,400,000,000. About $480,000,000 of this was wages and the other $926,000,000 must be attributed to the causes before described. Since that time wages have been reduced in a lump sum of over $400,000,000, with the further reduction that caused the machinists' strike, but rates have been reduced less than $100,000,000."

# Frisco Buys International-Great Northern

As announced briefly in last week's issue, the St. Louis-San Francisco has arranged to purchase the entire capital stock of the International-Great Northern and will operate that property in conjunction with its own system, thus increasing its mileage from 4,769 miles to 5,928 miles, including trackage rights held by the purchased line. By this means, the Frisco will secure a through route to the Gulf of Mexico at Galveston and access to the Mexican border at the Laredo gateway.

The purchase was arranged through an agreement with Willard V. King, James Speyer and Frederick Strauss, voting




**The Relation of the Frisco System to the International Great Northern**

trustees for the majority of the stockholders of the International-Great Northern, for the acquisition of $7,500,000 capital stock, at a price of $26.75 per share, subject to approval by the Interstate Commerce Commission. Subject also to the approval of the commission, and the stockholders of the St. Louis-San Francisco, the purchaser guarantees adjustment bondholders of the International-Great Northern that the distribution on the adjustment bonds during 1924, 1925, 1926 and 1927 shall not be less than three per cent, in consideration of the granting of an option for the purchase of these bonds at 90, plus accrued interest, up to January 1, 1928, and after that date at par and accrued interest.

This plan for the consolidation of the International-Great Northern with the St. Louis-San Francisco is the most recent development in the history of the I. & G. N., which was reorganized effective December 1 with the election of J. W. Kendrick as chairman of the board of directors and T. A. Hamilton as president. It is of interest to note that Mr. Kendrick, who has had a rather intimate contact with his property for a number of years in a study of its economic possibilities, had at one time borne similar relations with the purchasing road, the St. Louis-San Francisco. The financial plan for the reorganization of the International & Great Northern and a discussion of its potentialities as an important carrier were treated at some length in an article appearing in the *Railway Age* of June 10, page 1748, and supplemented in the issue of October 28, page 811.

The International-Great Northern lies entirely in Texas. It comprises a main stem 495 miles long, extending from Longview, Texas, to Laredo, with a connection from Palestine to Houston, 150 miles, and a line from Fort Worth to Houston, 272 miles. There is also a small mileage in three or four branches. Trackage rights over the Galveston, Houston & Henderson afford a connection to Galveston. An inability to obtain adequate funds for capital expenditures and the necessity for curtailing the outlay for maintenance have resulted in a physical condition of road equipment which does not enable the railroad to handle the traffic offered to the best advantage. Five million dollars expended for heavier rails, ballasting and embankment widening and for some additions to power during the course of the receivership, beginning in 1914, has served to effect some improvement, which will be amplified by further expenditures made possible as a result of the reorganization plan, which contemplates improvements in the physical property, the development of traffic and increased efficiency of operation.

The traffic of the International-Great Northern consists primarily of wheat, cotton and forest products. The greater part of the wheat is received in interchange at its northern terminii and delivered to seaboard at Galveston. This is true in part of the cotton traffic, but a considerable portion of this originates on its own lines which traverse an important cotton-producing territory. This is true in a measure also of the traffic in lumber and other forest products. There is also a considerable movement of manufactured products and oil and a growing vegetable business, the latter originating largely in the territory immediately to the north of Laredo. The principal source of strength to which the International-Great Northern may lay claim is its service as a connection between the Gulf ports and the Mexican gateway at Laredo, and the railroads with which it connects at For Worth and Longview, this being the function which it was orginally designed to perform as a part of the Gould system in conjunction with the Missouri Pacific, the Cotton Belt and the Texas & Pacific.

It is in this capacity as a connecting link that it has developed an important through passenger service. By traffic arrangements with the Missouri Pacific and the Texas & Pacific, through passenger trains are run between the junction at Longview, and Galveston and Laredo, that afford through service between St. Louis and the Gulf and Mexico City.

It is also in this function as the connecting link that the International-Great Northern will prove of great value to the St. Louis-San Francisco, a physical connection at Fort Worth, Texas, providing the means by which the St. Louis-San Francisco will be afforded a through line to the seaboard at Galveston and a connection with the National Lines of Mexico at Laredo. This will be of particular advantage in the grain movement to the Gulf, affording the Frisco a long haul on export wheat, which undoubtedly will make it of advantage for that road to develop this routing of the wheat movement to the maximum. This also applies to the cotton business originating on the Frisco lines in Texas and Oklahoma. It will also provide the means of developing a northbound movement of lumber, vegetables and other products originating in either Texas and Mexico, as well as the traffic to be received from shipping at the port of Galveston.

# Freight Car Loading

WASHINGTON, D. C.

THE NUMBER OF CARS loaded with revenue freight continued during the week of December 9 to be in excess of all previous records for the corresponding period of the year. The total was 919,828, or 178,487 more than for the corresponding week of last year and 81,875 more than for 1920. The loading was in excess of that for 1920 in all districts except the Pocahontas and in all classes of commodities except coal, coke and ore. The loading of miscellaneous freight was 50,000 cars above that for the corresponding week of 1920 and grain loading, 55,608 cars, was greater than it had been for several weeks, but coal loading, 200,505 cars, was slightly less than it has been in some earlier weeks.

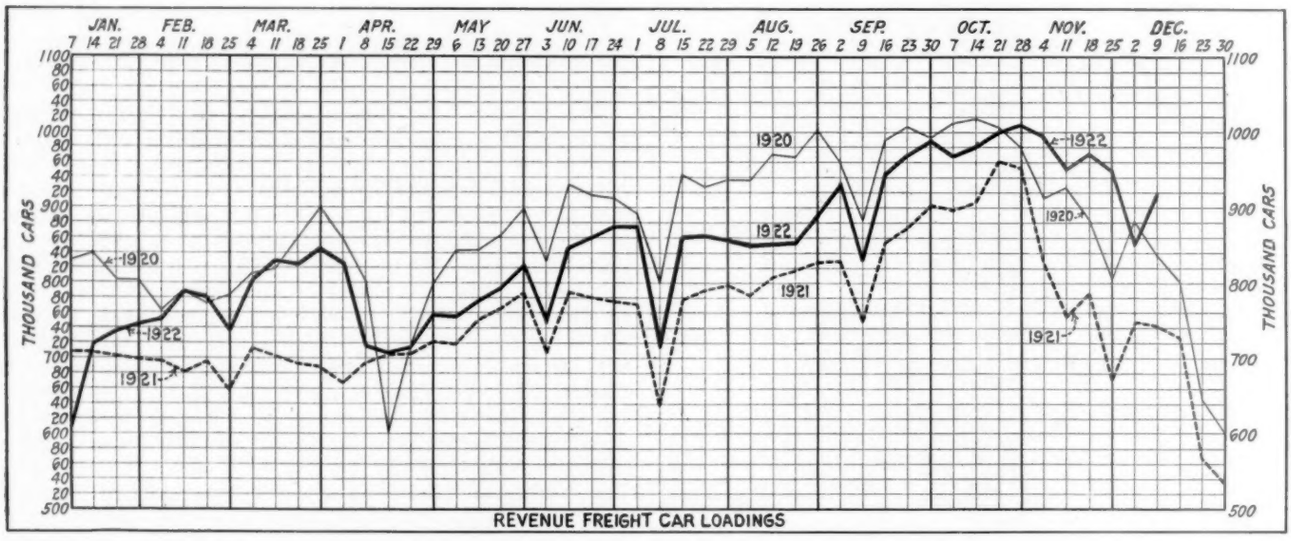
The freight car shortage for the period November 30-December 8 averaged 111,961, a decrease of 21,825 as compared with the previous week. This included 56,711 box cars and 37,613 coal cars. The surplus was 6,657.

The number of freight cars in need of repairs continues steadily to decrease. On December 1, 226,288 freight cars, or 9.9 per cent of the cars on the line, were in need of repairs. This was a decrease of 9,372 cars since November 15. Cars in need of heavy repairs totaled 176,006, compared with 187,596 on November 15, or a reduction of 11,590. Cars in need of light repairs numbered 50,282, which was an increase of 2,218. On December 1 last year 320,292 cars, or 14 per cent of the total number on line, were in need of repairs. Since July 1 last, the date on which the strike of railway shopmen began, there has been a reduction of 98,298 cars in the number in need of repairs.

From November 15 to December 1, the railroads repaired and turned out of their shops 13,484 locomotives. This was within six locomotives of the greatest number repaired during any semi-monthly period in approximately the last two years, and exceeded by 1,345 the number turned out of the shops during the first half of November this year.

Locomotives in need of repair on December 1 last totaled 18,009, or 27.9 per cent of the number on line. This was a decrease of 347, compared with the total number on November 15, at which time there were 18,356, or 28.5 per cent.

Of the total, 14,450 were in need of heavy repairs, a decrease since November 15 of 670 locomotives, while 3,559 locomotives required light repairs, an increase of 323. Serviceable locomotives on December 1 totaled 46,525. This was an increase of 424 over the number serviceable on November 15.




## REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY DECEMBER 9TH, 1922

| Districts | Year | Grain and grain products | Live stock | Coal | Coke | Forest products | Ore | Mdse. L.C.L. | Miscellaneous | Total revenue freight loaded: This year, 1922 | Corresponding year, 1921 | Corresponding year, 1920 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastern | 1922 | 10,953 | 4,358 | 59,951 | 2,496 | 6,491 | 1,469 | 64,752 | 82,720 | 233,090 | ..... | ..... |
| | 1921 | 9,822 | 3,998 | 41,390 | 1,632 | 5,134 | 1,241 | 63,769 | 60,929 | ..... | 187,915 | 205,265 |
| Allegheny | 1922 | 3,563 | 3,606 | 56,317 | 6,665 | 3,506 | 3,308 | 46,702 | 74,049 | 197,716 | ..... | ..... |
| | 1921 | 3,271 | 3,976 | 41,014 | 3,401 | 2,663 | 2,422 | 45,182 | 50,571 | ..... | 152,500 | 185,445 |
| Pocahontas | 1922 | 242 | 119 | 20,204 | 621 | 1,512 | 140 | 5,961 | 3,140 | 31,939 | ..... | ..... |
| | 1921 | 264 | 160 | 15,151 | 171 | 1,249 | 21 | 5,803 | 3,110 | ..... | 25,929 | 33,583 |
| Southern | 1922 | 3,917 | 2,287 | 22,415 | 1,224 | 22,831 | 1,195 | 38,564 | 42,000 | 134,433 | ..... | ..... |
| | 1921 | 3,577 | 2,019 | 15,262 | 478 | 16,560 | 531 | 37,958 | 35,494 | ..... | 111,879 | 126,524 |
| Northwestern | 1922 | 17,160 | 10,532 | 10,835 | 1,608 | 14,009 | 847 | 25,802 | 32,024 | 112,817 | ..... | ..... |
| | 1921 | 13,947 | 8,582 | 7,125 | 730 | 12,083 | 333 | 26,650 | 24,727 | ..... | 94,177 | 99,011 |
| Central Western | 1922 | 14,578 | 13,884 | 25,118 | 291 | 6,924 | 2,426 | 31,436 | 47,514 | 142,171 | ..... | ..... |
| | 1921 | 13,157 | 10,194 | 15,274 | 164 | 5,179 | 714 | 30,877 | 34,429 | ..... | 109,988 | 122,725 |
| Southwestern | 1922 | 5,195 | 3,384 | 5,765 | 146 | 7,922 | 494 | 15,175 | 29,581 | 67,662 | ..... | ..... |
| | 1921 | 4,475 | 2,633 | 2,999 | 95 | 6,606 | 722 | 16,182 | 25,241 | ..... | 58,953 | 65,400 |
| Total Western Dists. | 1922 | 36,933 | 27,800 | 41,718 | 2,045 | 28,855 | 3,767 | 72,413 | 109,119 | 322,650 | ..... | ..... |
| | 1921 | 31,579 | 21,409 | 25,398 | 989 | 23,868 | 1,769 | 73,709 | 84,397 | ..... | 263,118 | 287,136 |
| Total all Roads | 1922 | 55,608 | 38,170 | 200,505 | 13,051 | 63,195 | 9,879 | 228,392 | 311,028 | 919,828 | ..... | ..... |
| | 1921 | 48,513 | 31,562 | 138,215 | 6,671 | 49,474 | 5,984 | 226,421 | 234,501 | ..... | 741,341 | ..... |
| | 1920 | 35,725 | 32,225 | 229,950 | 13,789 | 49,593 | 18,431 | 197,642 | 260,598 | ..... | ..... | 837,953 |
| Increase compared | 1921 | 7,095 | 6,608 | 62,290 | 6,380 | 13,721 | 3,895 | 1,971 | 76,527 | 178,487 | ..... | ..... |
| **Decrease compared** | **1921** | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Increase compared | 1920 | 19,883 | 5,945 | ..... | ..... | 13,602 | ..... | 30,750 | 50,430 | 81,875 | ..... | ..... |
| Decrease compared | 1920 | ..... | ..... | 29,445 | 738 | ..... | 8,552 | ..... | ..... | ..... | ..... | ..... |
| December 9th | 1922 | 55,608 | 38,170 | 200,505 | 13,051 | 63,195 | 9,879 | 228,392 | 311,028 | 919,828 | 741,341 | 837,953 |
| December 2nd | 1922 | 49,341 | 34,381 | 186,158 | 13,075 | 60,010 | 10,550 | 199,717 | 291,987 | 845,219 | 741,849 | 882,604 |
| November 25th | 1922 | 54,790 | 40,217 | 202,032 | 13,234 | 66,046 | 15,052 | 228,771 | 335,353 | 955,495 | 673,465 | 803,701 |
| November 18th | 1922 | 55,204 | 40,735 | 205,024 | 12,431 | 61,403 | 32,780 | 228,922 | 332,595 | 969,094 | 790,363 | 889,138 |
| November 11th | 1922 | 52,501 | 38,001 | 188,312 | 12,273 | 60,392 | 39,383 | 228,050 | 334,997 | 953,909 | 755,777 | 927,586 |

Compiled by the Car Service Division, American Railway Association.

# Labor Problems From An Engineer's Point of View*

## With Particular Reference to His Position as an Intermediary As Between Labor and Capital

By Elisha Lee
Vice-President, Pennsylvania Railroad

THE ENGINEER in our present industrial system generally occupies a leading position in what we commonly refer to as management. He is entrusted with the determination of policies for successfully guiding and directing the work of large numbers of men. He is in turn responsible for creating and maintaining an output satisfactory as to quantity, quality and cost per unit, and in the case of public utilities, for continuity and safety of operation.

Necessarily, these responsibilities include the building up and holding together of a working force, adequate, but not excessive, in numbers, loyal and willing in spirit, and capable of maintaining a satisfactory rate of production. This means that the engineer must not only devise labor and operating policies which are sound on paper, but must convince his working forces of their reasonableness and fairness. From this viewpoint, part of the engineer's equipment is, or should be, an adequate understanding of human nature, and a real knowledge of the causes which contribute to labor unrest or contentment.

At present, and for some time back, the engineer, confronted with the problems which I have endeavored to sketch, has been obliged to cope with practically a universal demand for lower unit costs. The people want, and in some cases are insistently demanding, lower prices for manufactured articles and commodities and lower rates for service. It is hardly necessary for me to say that this expectation cannot be realized unless we can find some means of effecting lower labor costs, either in the form of readjusted wages, increased production per man hour, or both. This arises from the fact that labor is not only the largest individual item entering into costs, but if we analyze the cost of any product sufficiently, we shall find that labor represents ultimately nearly all the cost. Anthracite coal in the ground is worth only a few cents per ton—at least that is the basis upon which anthracite-bearing land is bought and sold. Anthracite in your cellar is worth $15 or $16 per ton. Practically all of the difference represents wages or compensation for labor or effort paid to different people handling the coal between the workings of the mine and the bin of the consumer. In other words, the cost delivered is largely labor. In the case of the railroads, their own payrolls constitute about 60 per cent of the total costs of operation, and fuel and material costs, which make up nearly all the other expenses, are in themselves almost altogether wages paid to other workers.

The main problem in reducing costs, whether of products or services, lies, therefore, in obtaining the co-operation of labor. Thus far, that co-operation has not been forthcoming with sufficient readiness to make satisfactory progress. We have in this connection two general factors to deal with. One is the attitude of labor unions, and the other is the restriction of immigration. The latter is a matter of public policy and, therefore, beyond control of the engineer as an engineer.

### Collective Bargaining, or Collective Coercion

Collective bargaining, in some form or another, is with us and I, for one, see little likelihood of its abandonment. It probably represents the only practicable basis by which the labor relationships of large masses of workers can be dealt with and adjusted. The thing is to distinguish between collective bargaining and collective coercion. Unfortunately, we have had a good deal of the latter; so much so that certain large and important groups of workers have been able to retain, in practical entirety, the highest inflated wage scales which prevailed during the war. We must cure that condition by a process of education, and by directing the pressure of public opinion against the attitude of those groups of workers who persist in substituting coercion for bargaining in their collective relations with society.

How unbalanced the present situation has become may be gathered to some extent from the fact that, while labor in the great organized crafts is receiving about two and one-half times pre-war wages, the farmer is receiving only 64 per cent of what he received for his products in pre-war times. These and other inequalities have set up strains in our social structure which will be very dangerous unless relieved in time. Capital is bearing a very large part of our tremendous tax burden, and, consequently the real return obtainable for its use is less than in pre-war times.

Capital is the savings of those who produce more than they consume; therefore, we are penalizing thrift on the one hand, and, by maintaining excessive wage scales and tolerating inefficiency in output, we are on the other hand placing a premium upon selfishness and waste.

The engineer is responsible not only to the owner of the enterprise in which he is engaged, but to society as a whole, for the cost of the output which society needs. The great task, therefore, is to devise ways and means for bringing the labor costs of products and service into a reasonable relationship with the capacity of the general public to pay. The problem is sometimes referred to as that of bringing down the cost of living. It might be more accurate to describe it as bringing living costs again into conformity with economic law. The present living costs are out of harmony with economic law and are filled with inequalities and injustices largely because many labor costs are being held artificially high.

### The Divided Allegiance of Labor

The fundamental problem, which I do not believe is hopeless of solution, is to bring the leaders of labor into acceptances of the truth that labor must conform to the same economic principles as all the rest of society; that otherwise society is on an insecure basis, and disaster to all is certain sooner or later to come about.

If we can achieve acceptance of this truth, we shall then have ended the divided allegiance of labor, between the union on the one hand and the employing industries on the other, which is the basis of most of the present inefficiency and excessive costs. We shall have both forces working to the same end, which is to increase the output and distribution of the product, because it will then be understood that wages can only be paid out of production.

While, according to historians, strikes and other concerted labor movements to obtain more satisfactory working arrangements were not unusual, from about 2000 years B. C. up to modern times in the old country, in our own country the condition of labor unrest did not assume definite form

*Abstract of an address delivered at the meeting of the Technology Clubs, Associated, New York City, Friday Evening, December 15, 1922.

until the early part of the nineteenth century, and was of no particular importance in our economic life until about the outbreak of the Civil War. Since that time the matter of unrest among laboring men has grown in a manner corresponding rather closely to the growth of the so-called factory system of industry, where capital, management and labor are rather distinct individual groups.

It will be recalled that, up to about the beginning of the nineteenth century, industrial plants were small and the owner was not only the capitalist, but also manager and one of the workmen. Therefore, these conditions of employment, constituting an intimate relationship between management and men, deserve serious consideration in determining the policy for the handling of men under our present industrial system.

### Desire for Increased Wages Not Greatest Cause of Strikes

I feel that we are often very much misled by the expressed demands involved in concerted labor movements, rather than the underlying cause for these demands. It is, for instance, a rather popular idea that the predominating cause of strikes is a desire for increased wages. As a matter of fact, the element of wages is, certainly in a very large percentage of strikes, only injected after the organization has been completed and functioning for some time. Many strikes are called without any mention of wages at all. There is a deeper cause than either wages or hours of labor, or even many of the demands calculated to improve working conditions. *I believe the chief underlying cause of labor unrest making itself felt in the form of labor unions, or other concerted labor movements, is the human desire to have an unoppressed voice in all deliberations where labor policies are involved.*

The same spirit, it seems to me, which has prompted men in overthrowing kingdoms in the old country from time to time, and particularly since the war, and in fighting to a successful conclusion the Revolutionary war in our own country, is quite as pronounced in the hearts of men with regard to their industrial life. They want to feel that they are a part of industry, have a perfect right to be consulted and to have their views and desires given the same thoughtful and sympathetic consideration that they received during those 300 years when this country industrially was in the state where the capitalist was also manager and co-worker.

There have been some experiments along this line in the form of working arrangements, commonly known as Employee Representation plans, where employees have been given unhampered right to select representatives to help mould the labor policy, and, as far as I have been able to learn, wherever management "threw the cards on the table" and placed these men on their honor, they have proved themselves honest, thoughtful and practical.

There are many other labor problems which the engineer has to cope with, particularly the selection and training of foremen, and their superiors, but, to my mind, no great progress will be made toward the elimination of the present state of unrest unless we establish an effective substitute for that condition where the employee was in position to present his point of view directly to management and have it given careful and sympathetic consideration.

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THE ANTHRACITE TONNAGE of the Lehigh Valley Railroad since the resumption of mining—September 15 to December 16—has been greater than in either 1921 or 1920. The total was 3,568,494 tons; 643,196 tons over 1921 and 302,074 tons over 1920. A statement issued by the road says that "at no time since the resumption of mining has there been any suspension because of a shortage of empty coal cars at the mines, and all coal produced has been moved promptly."

## Standardization From the Consumer's Point of View*

By N. F. Harriman

ONE OF THE MOST modern aids to industry is standardization, which is now recognized as being of the greatest importance to both producer and consumer. It is sometimes said that the benefits of standardization are mainly to the field of production. This is not the case. They are quite as important to both the field of buying and of selling. In industrial standardization it is the consumer who is ultimately benefited most, but the immediate benefits are largely to the producer, for it at once simplifies his work and enables him to produce what is required by the consumer cheaply and expeditiously. With lower production costs comes more extended use of the standard article, for it is a law of economics that when costs increase substitutes are used.

Objectors to standardization frequently urge that it would stifle initiative and progress and that the adoption of a standard prevents advance through improvements in the arts of manufacture. Of course this is not the case. A standard should remain standard only until something better is developed, but it should not be changed until justified from all points of view. Any given standard, to achieve its object, must be suitable for the intended use in the majority of cases. The exceptional case requires special consideration, and actual perfection will never be attained. The economies and benefits of standardization as applied to qualities of products and processes of manufacture have been so thoroughly demonstrated within the past few years that they are entirely outside the argumentative field. Standardization, like efficiency, is not an easy term to define; it is not always understood in its true sense and by many is looked upon with doubt and suspicion. The general idea of standards is not new, but its application to science, engineering and industry has been developed within comparatively recent years.

Standardization may be defined as the unification of the methods and practices involved in manufacture, construction and industry, and all lines of endeavor which present the necessity of repetition work. It may be considered under several aspects.

Standardization of nomenclature enables buyer, seller and manufacturer to use and understand the same language. It is very important that there be acceptable definitions of terms used in specifications and contracts. Purchasing is often done by persons who are quite familiar with the legal side of drawing up contracts, but who are not familiar with the technical details involved. The efficiency of many purchasing officers is lessened by their lack of knowledge of the nature and names of the articles they are intrusted to buy.

Standardization of variety, or simplification, involves the elimination of unnecessary types, shapes, grades and sizes of manufactured articles. Waste in industry is largely due to an over-multiplicity in the number of products, as well as to inefficiency of process. Waste due to idle stocks of material and products through deterioration, obsolescence and capital charges carried is large, especially with large stocks.

Dimensional standardization insures ready interchangeability of supplies and the proper inter-working of parts which may be manufactured or assembled by different manufacturers.

Standardization of specifications and methods of test puts bids on an easily comparable basis, promotes fairness in trade competition, and insures the proper grade of material for a given use.

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*From a paper presented at the National Exposition of Chemical Industries, New York, September 15. The author is engineer-physicist, U. S. Bureau of Standards and Technical Secretary, Federal Specifications Board.

The definitely standardized product is manufactured to meet particular wide needs, according to definite specifications, and is constantly tested to ensure its being up to standard grade. The ordinary purchaser is not an expert on quality of supplies, and in many cases the quality can be lowered and he would be none the wiser until the material is put into service.

One type, shape, grade or size of an article will not meet all the requirements of the consumer, neither is it desirable to have such an extensive variety that the differences are small and meaningless. The ideal condition is to have just enough variety to meet all the real needs with no overlapping. Sound industrial economy demands the elimination of the special or little used product and its substitution by the standard or most widely used and most efficiently produced goods.

Standardization of specifications is the most important phase of the subject, from the purchaser's viewpoint. It is the first and most essential step in the economy that arises from the purchase of materials or supplies in large quantities, and is a necessary factor in the improvement of the quality of materials purchased and the adaptation of quality to definite uses. The specification is the common meeting ground for the manufacturer, dealer and user, and it is at once a statement of the users' needs and what the maker is required to supply. Purchase by competitive bids on specifications is preferable to purchase on sample. The latter method implies that each bidder's product must be considered independently and it is often a very difficult matter to decide between different combinations of quality and price. The specification should include limiting values for the properties necessary to meet the required service, with proper tolerances. A proper specification is one which enables bidders to know exactly what is desired or required and what procedure the purchaser will follow to satisfy himself that the specification has been complied with. Defective and incomplete specifications, whether due to compromise of quality for temporary economy, or through lack of data, should be replaced by those in which the best magnitude of each property involved is so specified as to predetermine the definite quality best meeting the need. There is a growing appreciation of waste in industry due to the use of defective and improper materials.

To determine the value of any material for a given purpose, its properties must be measured, assuming that the properties upon which its use depends are known and are measurable. The testing of materials may prove a needless waste of time, energy and money unless due consideration is given to the nature of the tests applied, the conditions under which they are made and the interpretation of results. It includes both qualitative and quantitative measurements. These may vary from a simple visual inspection to an investigation involving laboratory and technical work of the most difficult and precise nature. Standardized methods of test consider all of these conditions and are a necessary part of an ideal specification for a material or a manufactured article. Friction and controversy between buyer and seller often arise as to the question of facts concerning the results of tests, especially when different methods or different equipment are used. Quality may be determined directly by a service test, indirectly by a test under simulated service conditions, or still less directly by a laboratory test of individual properties upon which the quality is known or assumed to depend.

The selection and adoption of specifications or standards without due regard to the manufacturing problems involved would be equally as serious as for manufacturers to establish standards without a careful consideration of the needs of the purchaser.

With many large corporations, the standardization of purchases and the resulting simplification of store stock varieties of materials offer a fertile field for economy.

# Ben W. Hooper Addresses Western Railway Club

## Efforts of Radical Labor Leaders and Politicians to Destroy American Institutions Denounced

NINE-TENTHS of the people of the United States agree with President Harding that the functions of the United States Railroad Labor Board must be exercised by some tribunal, in the opinion of Ben W. Hooper, chairman of the board, who addressed the Western Railway Club at Chicago on December 18. But, he said, the general public is probably not greatly concerned as to what the tribunal shall be. The results in wages and working conditions because of the intervention of such a tribunal will not be much different than those likely to be worked out as a natural effect of unrestricted economic action and reaction, in Mr. Hooper's opinion. Such a tribunal will, however, justify itself by the tremendous saving in the cost of the process to the railroads, the employees and the public.

Mr. Hooper began his address with a brief summary of the nature of and the conditions surrounding the work of the Labor Board, in which he characterized the institution itself as a "unique experiment in legislation in this country," conducted under conditions as far from those normal to the industry as they possibly could be. The board, he said, began its work following the fitful period of government control and was charged with the responsibility of deflating wages and working conditions of the biggest industry in the country, which had just been subjected to extremely artificial handling. Mr. Hooper compared the situation of the board with that of a man thrown into a den of Nubian lions and Bengal tigers, with instructions to bring them into peaceful harmony, with no other agency than that of his bare hands.

But whatever may be said of the quality of its work, Mr. Hooper said, the record leaves nothing to be desired as to the quantity. Up to date the board has handled 11,114 cases, 10,453 of which were formally docketed, and has disposed of 9,244 of the total number, 8,534 of these being docketed cases. But the service of the board, he said, cannot be measured alone by the results of its formal decisions. In his opinion, the mere fact that the board existed has in itself been of tremendous service, because it has constituted a forum before which both parties to the contests have had the opportunity of discussing their contentions publicly and in a measure getting the burden off their own shoulders on to that of the labor board. This, he believes, has been of inestimable value in clearing the air.

### Radical Labor Leaders

Mr. Hooper then paid his respects to radical labor leaders obsessed with the idea that they must back a political movement to destroy private ownership and hasten government ownership with either government or private operation. It is a serious question, he said, whether the type of morale

can be maintained among railway employees who follow such leadership, that is necessary to give the public the character of service it demands. The labor literature of today does not deal with questions pertaining to the work of the em-employees or those directly affecting wages and working conditions, but is largely devoted to the political aspects of the railway question and seeks to prejudice the employees against the managements and in favor of government ownership.

In making these statements, Mr. Hooper disclaimed any desire to criticize labor leaders for believing in government ownership. His criticism, he said, is aimed at some of the methods used to get it.

Mr. Hooper then referred to the so-called progressive convention held at Cleveland, Ohio, during the second week in December, the membership of which was made up of radical labor leaders and socialists. Continuing, Mr. Hooper said:

"There are not many thinking men who would like to have it said that they are not progressive and not many would want to admit that they are not conservative. A combination of these two characteristics meets the approval of the average American. A progressive who is not conservative is radical. A conservative who is not progressive is reactionary.

"A radical is a man whose normal gait is running away. He reminds one of the story of the man who had bought a new automobile, and overtaking an old colored friend on a country road, invited him to get in and ride with him. Thinking that he would give Uncle Eph a real thrill, he threw his machine wide open and was clipping off about 60 miles an hour. He lost control of the machine for the fraction of a second and the auto left the road and dashed into a tree, turned turtle and threw the occupants high and clear into a sand bank. They were jolted but not hurt. Uncle Eph arose and as he brushed off the sand, said, 'Boss, what pesters me is, how do you stop dat machine wha dey ain't no trees?' The radical element never got control of any government and run it very far without jumping the track and running into a tree.

"A reactionary is best described by the language of the old colored woman, who was asked where she was going. She replied: 'I ain't gwine nowha; I'se done been wha I'se gwine to.' A reactionary has done been wha he's gwine to and his eyes are fixed in satisfied retrospection on that place. Comparatively speaking, there is not a handful of reactionaries in the United States and the real conservatives are extremely scattering.

### The "Conservative-Progressive"

"A conservative-progressive is a man who moves steadily forward, but keeps his eyes on the road ahead. This man is the typical American citizen. He is the man who founded this government, the man who preserved the Union and freed the slaves, the man who has developed our vast resources, and the man who today stands for the perpetuation of our form of government, and its adaptation to the changing conditions of men and things. Men of this type realize that society, industry and government cannot stand still. They must go either forward or backward. Such men are not enamored of stagnation nor affrighted by the rolling tide of human progress. The conservative-progressive cannot command the approval of either the radical or the reactionary. The fact that he moves at all disturbs the reactionary. The fact that he studies the chart of human experience and sweeps the sea with the searchlight of prudent investigation peeves the impatient radical.

"These so-called progressive policies, which involve vital changes in our form of government, are not progressive, but are, in every sense, retrogressive. The effort to deprive the courts of the power of injunction for the protection of life, property and the right of free men to work is simply a retrogressive movement to an age when there was no law but might. The meaning of it is that the courts of this country shall stand shackled and gagged in the presence of insolent and triumphant brute force.

"The proposition to confer judicial powers on Congress is, so far as constitutional questions are concerned, retrogressive. It tends to destroy the balance wheel which our forefathers fixed in the constitution, and would ultimately make both the judiciary and the executive subservient to congress. The most radical changes in our government could be speedily wrought and our nation would be headed toward an irresponsible mobocracy and its final sequent, an autocracy. The statesmen who drafted our constitution full realized the danger of self-destruction inherent in popular government, and they made the judicial department a sea-wall against destructive tidal waves of popular sentiment, which recedes as quickly as they rise.

"The so-called progressive convention at Cleveland last week was dominated by certain leaders of labor organizations, associated with prominent representatives of the Socialist party. It seems to me that the rank-and-file of railroad labor in this country would indulge in much serious thought before they permitted themselves to be delivered. It is worthy of note that certain of the railroad labor organizations were conspicuously absent from the Cleveland meeting."

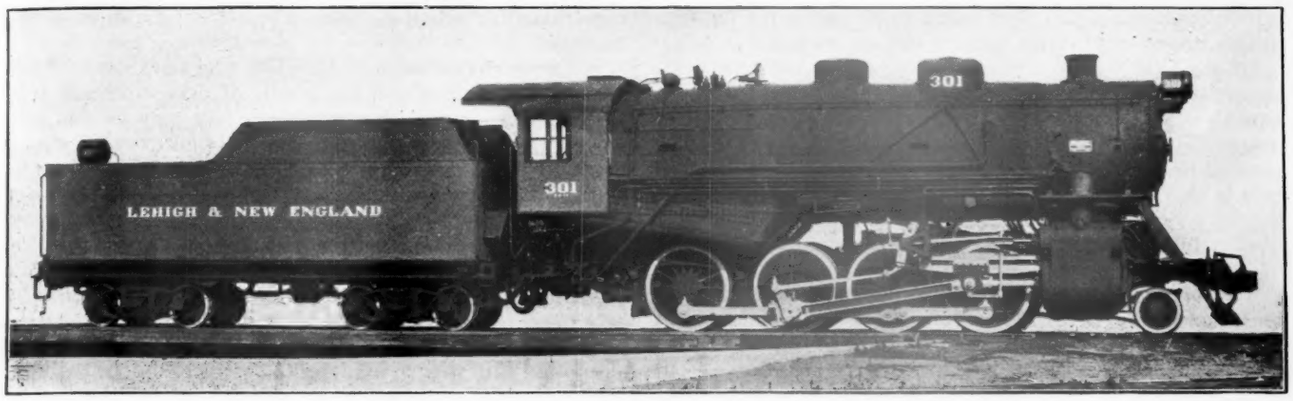
Mr. Hooper then drew attention to the fact that in all history but two ways had ever been found to get men to work. The first is hope of reward. The second is fear of suffering. The first inspires initiative, which brings out freely the full powers of the individual. The extreme example of the second is human slavery. Slavery, Mr. Hooper said, is the ultimate results of socialism or communism, based on the destruction of initiative through the denial to the individual of the hope of reward. In Russia, he said, this reversion to slavery has already taken place in the form of conscript labor.

### The Cleveland Socialistic Convention

Continuing, he said: "Not the least remarkable things about this Cleveland socialistic convention, which called itself progressive, was its proposed method of political procedure. It was given out that this organization, which is nothing more nor less than a political party, would not do business under its own name, but its adherents will participate in the nominating primaries of either or both the republican and democratic parties. Then if the nominations are not satisfactory, independent candidates may be put out. Such a proposition is fraught with the gravest political danger. It might easily result in the election of a large number of public officials by a minority of voters. If a majority of the voters of a district were opposed to radicalism but were divided between the two old parties, such an organized radical block might elect candidates by adding this minority vote to the anti-radicals who would slavishly adhere to the party label. Of course, it is obvious that the success of this minority radical movement is entirely dependent on the assumption that those opposed to it will not pursue the same tactics.

"With a situation of this sort in mind, it was recently suggested by Frank Munsey that a new party movement under the name of the democratic-republican party should be launched. This would hardly seem to be impracticable, but it would be perfectly feasible, wherever necessary, to set up an organization of conservative-progressive citizens, which would offset the radical organization, operate effectively in primaries and elections, and stiffen the backbone of weak-kneed candidates who might be intimidated by the organized radical minority.

"By such a course, can men who cherish the traditions of our country, protect our institutions from the assaults of radical malcontents."




*Consolidation Locomotive Weighing 301,500 lb. and Having a Tractive Force of 68,200 lb.*

# Powerful Consolidation Locomotive for the L. & N. E.

## Unusually Heavy Weight and High Tractive Force with Well-Proportioned Boiler Are Special Features of This Design

COMPARATIVELY few locomotives of the 2-8-0 type have been built during recent years for use on American railways. While this was a popular type of freight locomotive for a long period, it has largely been superseded by the Mikado type because of the increased depth of firebox and length of boiler banel, with correspondingly increased boiler capacity, which can be obtained when a trailing truck is added. However, the Consolidation locomotive is still a highly desirable type where high tractive force combined with low total weight is the important factor as it is where heavy trains, moved at slow speeds, comprise the bulk of the traffic. By careful designing, a boiler of sufficient capacity can be obtained for such service if road clearance does not impose too many restrictions.

Conditions on the Lehigh & New England are especially suited to the operation of Consolidation type locomotives. Most of the traffic is drag freight. Since the road is close to the coal mining section fuel is relatively cheap. The vertical clearance of 15 ft. 8½ in. gives room above the driving wheels for a boiler of large diameter with a deep throat sheet. The bulk of the power is of the Consolidation type and in adding to the number of its locomotives it was decided to adhere to the same type, but to increase the capacity over that of the older locomotives, which had 208,000 lb. on the drivers.

The four Consolidation type locomotives built by the American Locomotive Company which this road has placed in service recently are excellent examples of well-designed engines to meet special conditions. Weighing 301,500 lb. with 279,000 lb. on the drivers, they are the heaviest Consolidation locomotives ever constructed. The previous record for size with this type was made by the locomotives built by the Baldwin Locomotive Works for the Western Maryland and described in the *Railway Age*, May 13, 1921. In several particulars the weights and dimensions are the same for the two designs. Both have 27-in. by 32-in. cylinders, 61-in. drivers, 17-ft. 6-in. driving wheel base, and a rated tractive force of 68,200 lb. The Lehigh & New England locomotives have boilers with a larger grate area and more heating surface, which is reflected in the increase of 6,600 lb. in weight.

The height from the rail to the center of the boiler is 10 ft. 4 in. and to the top of the stack is 15 ft. 8½ in. The firebox is 126⅛ in. long by 96¼ in. wide, while the height from the bottom of the foundation ring to the crown sheet is 83½ in. at the front and 57¼ in. at the back, which gives a fair firebox volume and sufficient space for the application of a brick arch. There are 301 2-in. tubes and 50 5⅜-in. flues.

DIMENSIONS, WEIGHTS AND PROPORTIONS

| | |
|---|---|
| Type | 2-8-0 |
| Service | Drag freight |
| Cylinders, diameter and stroke | 27 in. by 32 in. |
| Valves, kind and size | Piston — 14 in. |
| **Weights in working order:** | |
| On drivers | 279,000 lb. |
| On front truck | 22,500 lb. |
| Total engine | 301,500 lb. |
| Tender | 184,100 lb. |
| **Wheel bases:** | |
| Driving | 17 ft. 6 in. |
| Total engine | 26 ft. 11 in. |
| Total engine and tender | 65 ft. 2 in. |
| Driving wheels, diameter outside tires | 61 in. |
| **Boiler:** | |
| Type | Straight top |
| Steam pressure | 210 lb. |
| Fuel, kind | Soft coal |
| Diameter, first ring, inside | 88 in. |
| Firebox, length and width | 126⅛ in. by 96¼ in. |
| Tubes, number and diameter | 301 — 2 in. |
| Flues, number and diameter | 50 — 5⅜ in. |
| Tubes and flues, length | 15 ft. |
| Grate area | 84.3 sq. ft. |
| **Heating surfaces:** | |
| Firebox, including arch tubes | 271 sq. ft. |
| Tubes and flues | 3,395 sq. ft. |
| Total evaporative | 3,666 sq. ft. |
| Superheating | 901 sq. ft. |
| Comb. evaporative and superheating | 4,567 sq. ft. |
| **Tender:** | |
| Water capacity | 10,000 gal. |
| Coal capacity | 16 tons |
| **General data, estimated:** | |
| Rated tractive force, 85 per cent | 68,200 lb. |
| Cylinder horsepower | 2,755 hp. |
| Boiler horsepower | 2,420 hp. |
| Speed at 1,000 ft. piston speed | 34 m.p.h. |
| Coal, rate per sq. ft. grate per hour | 106 lb. |
| **Weight proportions:** | |
| Weight on drivers ÷ total weight engine | 92.6 per cent |
| Weight on drivers ÷ tractive force | 4.08 lb. |
| Total weight engine ÷ tractive force | 4.42 |
| Total weight engine ÷ cylinder horsepower | 109.4 lb. |
| **Boiler proportions:** | |
| Boiler horsepower ÷ cylinder horsepower | 87.9 per cent |
| Comb. heating surface ÷ cylinder horsepower | 1.66 |
| Tractive force ÷ comb. heating surface | 14.93 |
| Tractive force × dia. drivers ÷ comb. heating surface | 911 |
| Cylinder horsepower ÷ grate area | 32.7 |

The total evaporative heating surface is 3,666 sq. ft., of which 271 sq. ft. is in the firebox. The superheater has 901 sq. ft. heating surface. The rated boiler capacity is 2,420 hp., or 88 per cent of the cylinder power, which is 2,755 hp.,

a proportion which has been found to be ample for the conditions under which these locomotives are operated.

Of the total weight of the locomotive 92.6 per cent is on the drivers and available for adhesion, whereas with the typical Mikado locomotive the weight on the drivers is nearer 75 per cent. The factor of adhesion is 4.08. The possibilities of excellent use of the weight by a Consolidation type is shown by the fact that the total weight is only 109.4 lb. per cylinder horsepower and 4.42 lb. per pound of rated tractive force, figures that can scarcely be equalled by a locomotive of the 2-8-2 type.

Two of these locomotives are hauling coal trains of 3,500 gross tons from Lansford to Pen Argyl, a distance of 54 miles, part of which is up a 0.5 per cent grade, at a speed of approximately 20 m. p. h. Two others are running out of Pen Argyl and handling 690 gross tons up a 2.75 per cent grade without difficulty. While no test runs have been made, it has been observed that these locomotives are free steamers, of ample boiler capacity and consume a conservative amount of fuel.

The leading dimensions, weight distributions and proportions of these locomotives are given in the accompanying table.

## Another Perfect Package Campaign

THE USE OF STEEL strapping or wire binding on boxes of shoes, clothing, confectionery, groceries and other things is looked upon by many shippers, not as an added expense (as compared with boxes not reinforced) but as an improvement in service which more than pays for itself. This fact, demonstrated by extensive inquiry, is the salient point in a circular which has been issued by Lewis Pilcher, secretary of the American Railway Association's Committee on Freight Claim Prevention, and sent to boards of trade, chambers of commerce and other shippers' organizations all over the country. Whether or not Mr. Pilcher would call it a "campaign" we do not know; but his circular contains a picture showing a pile of a dozen boxes, properly strapped and wired, which might well enlist the careful attention of any shipper interested in getting his goods into the buyers' hands in the best possible condition. Perhaps this effort might be called a movement for super-perfect packages.

With merchants or manufacturers who have not carefully investigated the cost and the results of using adequate reinforcements on boxes, the first impression may be that such an addition to ordinary boxing is merely an extra expense to head off thieves, and, therefore, is of interest only to the carrier. The carrier must bear the loss if boxes are tampered with or stolen, therefore let him provide the protection. But the carrier cannot with any reasonable economy go into the shipper's packing-room; and even if he could, the objection of the shipper to his presence there would, usually, be strong. That is one reason for not asking the carrier to take action. Another is that the shipper will find that strapping and wiring are profitable, therefore he will not wish for anybody's assistance in the matter.

A business may be so small that this argument would not be susceptible of complete demonstration mathematically; and a saving, where it is accomplished, may sometimes show itself in so many different elements, or may be spread over such a considerable period of time, that only a careful study will give full assurance of success; but the essential fact remains, nevertheless. Mr. Pilcher gives parts of numerous letters received from shippers who are using wires and straps, from which we quote:

"We would not under any circumstances permit a case to leave our establishment unless fully strapped in accordance with our system. The result of this is shown by the few claims we have had in the past 20 years with railroads although we are one of the largest shippers in the industry."—Clothing manufacturer.

"We find that our claims for damages and losses of goods due to pilfering have been reduced to such an extent that we have almost forgotten how to make out claims for loss in transit. In considering the amount of goods lost and the number of claims that we made before using the straps, we think this in itself is worthy of consideration, also combining it with satisfactory service to our customers."—Manufacturing confectioner.

**Examples of Well-Protected Boxes**

"We have been using steel band strapping on boxes of groceries for seven years and under no circumstances would we discontinue the use of it."—Large wholesale grocery house.

"Never had to file a claim for damage by bursted container—considered cheap insurance."—Phonograph manufacturer.

The Union News Company uses band strapping and finds "That bad order complaints have been reduced 75 per cent."

"Our experience has been that this wire binding, even though it is only one strand to each case, strengthens it very considerably

and transports it in a very satisfactory manner."—Drug house.

"Since using steel strapping, we have had very few claims for loss by pilferage and no complaints from customers owing to poor packing condition. Bands when placed on center of case give strength where most needed."—Manufacturer of underwear.

"Since using strapping our loss claims have been reduced 75 per cent."—Shipper of underwear.

The Freight Container Bureau, A. R. A., has made experimental studies of the strength of boxes, and Mr. Pilcher calls attention to the fact that a box of a given strength can often be made of thinner boards if reinforced by wire or strap, and the addition of these makes the package safer against theft. Pilferers show a marked preference for unprotected packages. The average buyer will give preference to the wholesaler whose shipments arrive uniformly in good condition. Wholesalers testify to the value of this element in holding custom. Its cost is small. With modern methods and apparatus, large cases of dry goods are strapped in less than a minute each.

Railroad men, of whatever branch of the service, who are interested in a smooth-working freight department, will do well to spread this information among all classes of shippers whose goods would be benefited by the improvement.

# Labor Board Announces New Rules for M. of W. Men

## Previous Orders Regarding Overtime Approved—Labor Member Dissents—Chairman Files Answer

NEW RULES governing the working conditions of maintenance of way employees and dealing specifically with the subjects of seniority, promotion and, in part, hours of service, overtime and call, were announced by the Railroad Labor Board during the past week. At the same time the Board approved its previous rulings on the subjects of punitive overtime, discipline and grievances and other miscellaneous conditions, bringing another dissenting opinion from A. O. Wharton, member of the labor group on the Board. In December, 1921, the Labor Board, in its Decision No. 501, promulgated a set of new rules to take the place of the old maintenance of way national agreement. The outstanding rules announced at that time included provisions for the payment of punitive overtime after the tenth hour, instead of after the eighth hour on continuous service as had been the case under the old national agreement, and for the revision of other rules of the national agreement so that the subjects involved might be left open for adjustment to fit peculiar local conditions. This decision was described in the *Railway Age* of December 17, 1921, page 1215.

The present ruling of the Board continues in effect the following articles and sections of this previous Decision No. 501:

All of Article I, involving the scope of the rule.

All of Article IV, involving questions of discipline and grievances.

Sections a1, a2, a3, a5, a6, a8, d1, d2, e, f, i, j, k2, l, m, n, o, p, q, of Article V, involving hours of service, overtime and calls.

Sections a to h, inclusive, and Section m of Article VI, involving general rules.

The new rules promulgated by the Board at this time include the following:

### ARTICLE II—SENIORITY

Sec. (a) Seniority begins at the time the employee's pay starts.

Sec. (b) Rights accruing to employees under their seniority entitle them to consideration for positions in accordance with their relative length of service with the railroad, as hereinafter provided.

Sec. (c-1) Seniority rights of employees are confined to the subdepartment in which employed.

Sec. (d-1) Seniority rights of laborers, as such, will be restricted to their respective gangs, except when force is reduced laborers affected my displace laborers junior in service on their seniority district.

Sec. (d-2) Seniority rights of laborers to promotion will be restricted to the territory under the jurisdiction of only one supervisor or other corresponding officer, except that for laborers in the mechanical department such rights will be confined to the place where employed.

Sec. (e) Seniority rights of supervisory forces in the bridge and building department will extend over the territory under the jurisdiction of one division superintendent.

Seniority rights of supervisory forces in the track and roadway departments will extend over the territory under the jurisdiction of one roadmaster.

Seniority rights of supervisory forces over laborers in the maintenance of equipment department will extend over the territory under the jurisdiction of one master mechanic.

Sec. (f) Employees assigned to temporary service may, when released, return to the position from which taken without loss of seniority.

Sec. (g) Seniority rosters of employees of each subdepartment by seniority districts will be separately compiled. Copies will be furnished foremen and employees' representatives and be kept at convenient places available for inspection by employees interested.

Sec. (h) Seniority rosters will show the name and date of entry of the employees into the service of the railroad, except that names of laborers will not be included and their seniority rights will not apply until they have been in continuous service of the railroad in excess of six (6) months.

Sec. (i) Rosters will be revised in January of each year and will be open to correction for a period of sixty (60) days thereafter.

Sec. (j) Employees given leave of absence in writing by proper authority of the railroad, for six (6) months or less, will retain their seniority. Employees failing to return before the expiration of their leave of absence will lose their seniority rights, unless an extension has been obtained.

Sec. (k) When employees laid off by reason of force reduction desire to retain their seniority rights, they must file with the officer of the subdepartment notifying them of the reduction, their address, and renew same each sixty (60) days. Failure to renew the address each sixty (60) days or to return to the service within seven (7) days after being so notified, will forfeit all seniority rights.

Sec. (l) Employees temporarily transferred by direction of the management, from one seniority district to another will retain their seniority rights on the district from which transferred.

Sec. (m) In case of change in seniority districts, a relative proportion of the total employees affected will be transferred to, and their seniority rights adjusted in, the revised district, by the management, with a properly constituted committee representing the employees.

Sec. (n) Employees accepting positions in the exercise of their seniority rights will do so without causing extra expense to the railroad, except as provided in these rules.

### ARTICLE III—PROMOTIONS

Sec. (a) Promotions shall be based on ability, merit and seniority. Ability and merit being sufficient, seniority shall prevail; the management to be the judge.

Sec. (b) In transferring employees to fill vacancies or new positions, the provisions of section (a) of this article will apply.

Sec. (c) Employees are entitled to promotion only on the district and in the subdepartment over which their seniority rights prevail.

Sec. (d) Employees declining promotion shall not lose their seniority, except to the employee promoted and only in the next higher rank of service.

Sec. (e) Employees accepting promotion and failing to qualify within thirty (30) days may return to their former positions.

Sec. (f) New positions and vacancies will be bulletined within thirty (30) days previous to or following the dates such vacancies occur, except that temporary vacancies need not be bulletined until

the expiration of thirty (30) days from the date such vacancies occur.

Sec. (g) Promotions to new positions or to fill vacancies will be made after bulletin notice has been posted for a period of ten (10) days at the headquarters of the gangs in the subdepartment of employees entitled to consideration in filling the position, during which time employees may file their applications with the official whose name appears on the bulletin. The appointment will be made before the expiration of thirty (30) days from the date the bulletin is posted and the name of the employee selected will then be announced. New positions or vacancies may be filled temporarily, pending permanent appointment.

Sec. (h) The general rule of promotion and seniority will not apply to positions of track, bridge and highway crossing watchmen and flagmen at railway (non-interlocked) crossings, but, when practicable, such positions will be filled by incapacitated employees from any department, and reference in filling and retaining these positions will be determined by the degree to which incapacitated for other work, seniority in the service of the railroad and ability to perform the work.

ARTICLE V—HOURS OF SERVICE, OVERTIME AND CALLS

Sec. (c-1) The starting time of the work period shall be arranged by mutual understanding between the local officers and the employees' committee based on actual service requirements.

Employees' time will start and end at designated assembling points for each class of employees.

Sec. (h) Employees whose responsibilities and/or supervisory duties require service in excess of the working hours or days assigned for the general force will be compensated on a monthly rate to cover all services rendered, except that when such employees are required to perform work which is not a part of their responsibilities or supervisory duties, on Sundays or in excess of the established working hours, such work will be paid for on the basis provided in these rules in addition to the monthly rate. Section foremen required to walk or patrol track on Sundays shall be paid therefor on the basis provided in these rules in addition to the monthly rate.

Supervisory forces shall be compensated on the same overtime basis as the men supervised when the general force is required to work in excess of eight (8) hours per day.

Sec. (k-1) Where special work, not within the scope of this agreement, is done outside of regular work period and extra compensation agreed upon, overtime will not apply.

Sec. (r) Except as provided in these rules no compensation will be allowed for work not performed.

The request of the employees that a rule be incorporated in their agreements prohibiting the contracting of work to outside employees was denied by the board on the ground that its position with respect to this question "has been clearly and definitely set out in numerous decisions recently issued and that a further reiteration of such position is unnecessary."

## A. O. Wharton Files Another Dissenting Opinion

Mr. Wharton, in his dissenting opinion, strenuously objected to the Board's reiteration of its ruling on overtime payments for service rendered on Sunday and seven designated holidays and establishing pro rate payments for the ninth and tenth hours when worked continuous with the regular work period.

After quoting under the caption "Lest We Forget" the recommendations of the Railroad Wage Commission, Mr. Wharton said:

The majority, in denying these employees punitive overtime rates for Sundays and the seven designated holidays and for service rendered in excess of eight hours, are at variance with the trend of modern thought. Wise employers have quite generally recognized the justice of the workers' plea. The federal, state, and municipal governments have almost uniformly recognized the principle of punitive payment for this overtime. Tribunals and boards of arbitration created and selected to pass upon this question are to be included in the long list, and society generally endorses this principle.

There is one notable exception, however, and that is the tribunal created by an act of Congress, obligated under oath to establish "just and reasonable" rates of pay and rules governing working conditions for railroad employees.

Railroad labor, notwithstanding the misstatements emanating from the paid propagandists in the employ of the so-called "hard boiled" group of carriers, does not seek preferential treatment, but does demand and has the right to expect fair and impartial consideration. That much and more they are entitled to.

Of course there is discontent and unrest among railroad employees when an examination of the decisions of this Board will disclose that there has been but one decision issued during its existence that represented any betterment of their conditions of employment, and that decision (Decision No. 2, increasing wage rates, effective May 1, 1920), did not give consideration to the increase in the cost of living by 16 per cent, primarily due to the fact that the information was not available until a date subsequent to the findings of the Board; but the employees never benefited from that fact in any subsequent decision of the Board. This statement must not be construed to mean that the Board has not rendered decisions sustaining employees in many of the disputes filed for decision; it does mean that all other decisions rendered represented no improvement over conditions which had been previously established by and through the various organizations representing employees, or were less favorable than the rules of existing contracts provided.

## B. W. Hooper Defends Majority's Ruling

An answer to Mr. Wharton's dissenting opinion in the form of a statement by B. W. Hooper, chairman of the Board, was also attached to the decision. After pointing out that he had not voted for the rule providing for pro rata rates of pay for Sunday and holiday work because of his belief that time and one-half should be paid for Sunday work, *except* such work as is unavoidably and regularly performed on Sundays, and which is absolutely essential to the continuous operation of the railroad (the principle embraced in the Sunday and holiday rule of the shopmen), Mr. Hooper said:

The statement in his dissenting opinion to the effect that there is discontent among railroad employees, because they have not retained under the decisions of the Labor Board everything of rules and wages that they obtained during government control is not impressive. Practically nobody else in this country has succeeded in maintaining the prices and conditions of work and business built up during the stress of that abnormal period. Railroad labor and its representatives could well afford to mingle with their regrets over the comparatively little they lost a large degree of self congratulation over the great advances they have retained. In view of the sufferings and losses of the farmers and producers of the country, from which railroad labor has been largely exempt, the railway employees could consistently subdue their unrest and devote their enthusiastic exertions to the efficient service of the people who are paying for it.

It must also be remembered that many of the carriers have not been pleased with decisions of the Labor Board. Some of the most important decisions that have ever been rendered by the Board were favorable to the employees. For example, the Pennsylvania case and the contract cases, in both of which the Department of Justice at Washington is defending the rights of the employees on up to the Supreme Court.

When the constituted authorities are being criticized, for denying some of the contentions of a given class of citizens, it would be refreshing to make occasional mention of the fact that the same authorities have been equally as zealous in upholding the rights of that class. A degree of fairness along this line would obviate class hatreds, allay unrest, and strengthen loyal patriotism.

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NEWS LETTER No. 9 has been issued by the Railway Fire Protection Association, E. A. Ryder, president, containing news items and other matters which have come to the attention of the officers since the annual meeting last October. Fires in freight cars constitute the subject of a short article in which operating officers are urged to see that empty cars, when left unattended, have their doors shut. One prominent road, in nine months, has recorded 28 fires in freight cars, with considerable losses; and of this number, 12 were discovered in cars with open doors. In view of experiences had on a number of roads during the past summer in the construction or management of temporary barracks for shopmen, there has been appointed a committee on emergency housing, of which P. A. Bissell, 65 Kilby street, Boston, Mass., is chairman. One of the suggestions in this pamphlet is that the sessions of the association, on the occasion of the annual conventions, should be limited to two hours in the morning and two hours in the afternoon "so that there would be less strain and tiresomeness."

# A List of Salaries of Railroad Officers

## Senate Committee Publishes Compilation Giving Compensation Before and After Federal Control

WASHINGTON, D. C.

A LIST OF THE SALARIES of railroad officers, attorneys, publicity agents, and other employees receiving compensation amounting to $5,000 or more during the calendar years 1914 and 1917, and proportionate compensation for the ten months, March 1 to December 31, 1920, and for the first six months of 1921, together with the amounts and dates of any increase or decrease between March 1, 1920 (the date of the return of the roads from federal control), and June 30, 1921, is published in Volume 5 of the report of the hearings before the Senate committee on interstate commerce in its general railroad investigation under Senate resolution No. 23. The hearings were concluded on June 19 but the report has just been printed. The information as to salaries, etc., published as an appendix to the report, was furnished in sworn statements by the railroad companies, the entire list occupying 241 pages. Following is a list of the presidents or chairmen and also of other officers receiving at the rate of $20,000 or more per annum as shown in the report. There are some duplications in the printed list where men held various positions at different times and in some cases the total compensation can be found only by combining salaries received on various roads comprising a single system. Apparently also one or two roads reported the full year's compensation for the ten months of 1920 and the first six months of 1921 as the amounts shown are the same in both cases, and there are some other apparent errors in the compilation.

Some large roads are missing from the report. In some cases footnotes to the tables state that reductions in salaries were made later in 1921. Of all the officers named in this list about 50 received increases and about ten received decreases for the same position following the return of the roads.

### Salaries of Railroad Officers

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| **ALABAMA & VICKSBURG** | | | | |
| D. D. Curan, pres. and g. m.. | $17,500 | | | |
| L. A. Jones, pres. and g. m.... | | $15,000 | $16,666 | $10,000 |
| **ANN ARBOR** | | | | |
| Newman Erb, pres..... | 5,000 | 7,500 | 7,750 | 6,000 |
| **ATCHISON, TOPEKA & SANTA FE** | | | | |
| E. P. Ripley, pres..... | 75,000 | 75,000 | | |
| W. B. Storey, pres..... | | | 41,666 | 25,000 |
| E. J. Engel, v. p. ..... | | | 20,833 | 12,500 |
| S. T. Bledsoe, genl. coun'l.... | | | 25,000 | 15,000 |
| Asst. general solicitor..... | | 20,000 | | |
| D. L. Gallup, compt..... | 15,000 | 16,250 | 16,666 | 10,000 |
| Gardiner Lathrop, genl. sol... | 25,000 | 25,000 | 20,833 | 12,500 |
| A. G. Wells, v. p. ..... | | | 25,000 | 15,000 |
| F. C. Fox, g. m. ..... | 15,000 | 16,250 | 16,666 | 10,000 |
| E. Chambers, v. p. ..... | 22,500 | 23,750 | 20,833 | 12,500 |
| F. G. Pettibone, v. p. and g. m. | 15,000 | 16,250 | 16,666 | 10,000 |
| **ATLANTA, BIRMINGHAM & ATLANTIC** | | | | |
| E. T. Lamb, pres. ..... | | 24,999 | | |
| B. L. Bugg, pres. and recr..... | | | 15,000 | 2,785 / 4,000 |
| **ATLANTIC COAST LINE** | | | | |
| H. Walters, chm. of the bd... | 7,735 | 7,800 | 6,500 | 3,900 |
| J. R. Kenly, pres. ..... | 17,850 | 18,000 | 16,333 | 10,000 |
| **BALTIMORE, CHESAPEAKE & ATLANTIC** | | | | |
| T. Murdock, pres. and g. m... | | | 2,970 | 1,980 |

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| **BANGOR AND AROOSTOOK** | | | | |
| Percy R. Todd, pres..... | 27,500 | 30,000 | 25,000 | 15,000 |
| **BELT RY. OF CHICAGO** | | | | |
| H. G. Hetzler, pres..... | 7,500 | 7,500 | 6,250 | 3,750 |
| **BESSEMER & LAKE ERIE** | | | | |
| J. H. Reed, pres..... | 10,000 | 25,606 | 26,840 | 7,590 |
| **BOSTON & MAINE** | | | | |
| Morris MacDonald, pres..... | 21,733 | | | |
| J. H. Hustis, pres..... | 13,266 | 35,000 | 37,500 | 22,500 |
| **BUFFALO, ROCHESTER & PITTSBURGH** | | | | |
| W. T. Noonan, pres..... | 40,833 | 50,000 | 41,666 | 30,000 |
| J. F. Dinkey, aud. and treas... | 15,000 | 15,000 | 13,333 | 10,000 |
| T. F. Brennan, v. p. ..... | | 10,333 | 13,333 | 10,000 |
| **BUFFALO & SUSQUEHANNA** | | | | |
| H. I. Miller, chm. of bd..... | 17,784 | | | |
| E. R. Darlow, pres..... | 10,714 | 34,700 | 12,250 | 7,350 |
| **CAROLINA, CLINCHFIELD & OHIO** | | | | |
| Mark W. Potter, pres..... | 15,000 | 20,000 | 6,277 | |
| Norman S. Meldrum, pres.... | | | 5,388 | 4,999 |
| **CENTRAL OF GEORGIA** | | | | |
| W. A. Winburn, pres..... | 14,611 | 20,000 | 25,000 | 15,000 |
| A. R. Lawton, v. p..... | 10,000 | 10,000 | 16,666 | 10,000 |
| **CENTRAL VERMONT** | | | | |
| E. C. Smith, pres..... | 12,000 | 12,000 | 10,000 | 6,000 |
| **CHARLESTON & WESTERN CAROLINA** | | | | |
| F. B. Grier, pres. and g. sol... | 4,200 | 6,000 | 7,333 | 5,000 |
| **CHICAGO & ALTON** | | | | |
| W. G. Bierd, pres..... | 25,833 | 36,000 | 30,000 | 18,000 |
| **CHICAGO & EASTERN ILLINOIS** | | | | |
| W. J. Jackson, recr..... | 24,000 | 24,000 | 30,000 | 18,000 |
| W. H. Lyford, genl. coun'l... | 24,000 | 24,000 | 20,000 | 12,000 |
| **CHICAGO & NORTH WESTERN** | | | | |
| M. Hughitt, Sr., chairman.... | 50,000 | 50,000 | 25,000 | 25,000 |
| W. H. Finley, pres..... | 60,000 | 50,000 | 40,000 | 40,000 |
| M. Hughitt, Jr., v. p. ..... | 28,000 | 25,000 | 25,000 | 25,000 |
| A. C. Johnson, v. p. ..... | 30,000 | 30,000 | 25,000 | 25,000 |
| General traffic manager..... | 15,000 | 20,000 | 20,000 | |
| | | | Abolished Dec. 31, 1920 | |
| J. B. Sheehan, genl. coun'l... | 10,000 | 15,000 | 22,600 | 22,600 |
| F. W. Sargent, genl. sol..... | 12,500 | 15,000 | 20,000 | 20,000 |
| H. L. Adams, Iowa attorney.. | 25,000 | 15,000 | 9,000 | 9,000 |
| **CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA** | | | | |
| Marvin Hughitt, chm. of bd.. | 10,000 | 10,000 | 4,166 | 2,500 |
| W. A. Gardner, pres..... | 15,000 | | | |
| J. T. Clark, v. p., St. Paul... | 21,000 | | | |
| President ..... | | 25,000 | 20,833 | 12,500 |
| A. W. Trenholm, v. p. and g. m. | | 17,000 | | |
| Vice-president, St. Paul..... | | | 16,666 | 10,000 |
| **CHICAGO GREAT WESTERN** | | | | |
| S. M. Felton, pres..... | 40,000 | 34,534 | 36,666 | 25,000 |
| **CHICAGO, INDIANAPOLIS & LOUISVILLE** | | | | |
| Frederic A. Delano, pres..... | 15,792 | Resigned Aug. 18, 1914 | | |
| H. R. Kurrie, president..... | 4,916 | 17,231 | 20,833 | 12,500 |
| | | Elected president Sept. 3, 1914 | | |
| **CHICAGO, BURLINGTON & QUINCY** | | | | |
| Geo. B. Harris, chm. of bd.... | 15,000 | 15,000 | | |
| D. Miller, pres..... | 60,000 | | | |

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| Hale Holden, v. p. | 31,102 | | | |
| President | | 50,000 | 41,666 | 25,833 |
| C. G. Burnham, exec. v. p. | 22,500 | 31,250 | 29,166 | 17,500 |
| H. E. Byram, v. p. | 25,000 | 22,500 | | |
| | | Resigned Sept. 30, 1917 | | |
| E. P. Bracken, v. p. | 15,000 | 19,750 | 20,833 | 12,500 |
| C. E. Spens, v. p. | 10,000 | 14,000 | 20,833 | 12,500 |
| | | | Deceased | |
| C. M. Dawes, genl. coun'l. | 25,000 | 7,921 | April, 1917 | |
| O. M. Spencer, genl. coun'l. | 16,000 | 23,583 | 20,833 | 12,500 |
| Bruce Scott, genl. sol. | 10,000 | 14,833 | 16,666 | 10,000 |
| **Cincinnati, Indianapolis & Western** | | | | |
| B. A. Worthington, pres. | | 15,000 | 16,666 | 10,000 |
| **Cleveland, Cincinnati, Chicago & St. Louis** | | | | |
| A. H. Smith, pres. | 7,072 | 8,757 | 11,733 | 7,030 |
| Ira A. Place, v. p. | | | 4,803 | 3,515 |
| A. T. Hardin, v. p. | | 4,777 | 4,803 | 3,515 |
| A. H. Harris, v. p. | 3,816 | 4,236 | 4,803 | 3,515 |
| G. H. Ingalls, v. p. | | | 4,218 | 2,812 |
| H. A. Worcester, v. p. | | | 20,202 | 13,258 |
| **Colorado & Southern** | | | | |
| D. Miller, pres. | 10,000 | | | |
| Hale Holden, pres. | 3,833 | 15,000 | 8,333 | 5,000 |
| C. G. Burnham, exec. v. p. | | | | 416 |
| **Chicago, Milwaukee & St. Paul** | | | | |
| | | | (From Oct. 1 to | |
| A. J. Earling, chm. of bd. | | 18,750 | Dec. 31, 1917) | |
| President | 75,000 | 56,250 | | |
| H. E. Byram, president | | 17,000 | 50,000 | 30,000 |
| D. L. Bush, v. p. | 20,000 | 20,000 | 20,833 | 12,500 |
| H. B. Earling, v. p. | 20,000 | 20,000 | 16,666 | 10,000 |
| E. D. Sewall, v. p. | 20,000 | 20,000 | 12,500 | 7,500 |
| E. S. Keeley, v. p. | 20,000 | 20,000 | | |
| R. M. Calkins, v. p. | | | 25,000 | 15,000 |
| Burton Hanson, genl. coun'l. | 25,000 | 25,000 | 20,833 | 12,500 |
| **Chicago, Rock Island & Pacific and Chicago, Rock Island & Gulf** | | | | |
| T. M. Schumacher, chm. of bd. | | (Jan. to June 24, 1917, | | |
| and exec. committee | 25,000 | $36,000) | | |
| J. M. Dickinson, recr. | | 20,612 | | |
| H. U. Mudge, pres. | 60,000 | | | |
| J. E. Gorman, pres. | | 25,000 | 41,666 | 25,000 |
| Chief executive officer | | 18,000 | | |
| First v. p. freight and passenger traffic | 25,000 | | | |
| M. L. Bell, v. p. and g. coun'l. | | | 24,166 | 17,500 |
| Frank Nay, v. p. and compt. | | | 16,666 | 2,202 |
| T. H. Beacom, v. p. and g. m. | | | 16,666 | 10,000 |
| L. C. Fritch, v. p. | | | 16,666 | 10,000 |
| **Delaware & Hudson** | | | | |
| L. F. Loree, pres. | 25,000 | 25,000 | 31,250 | 18,750 |
| W. H. Williams, v. p. | 7,500 | 10,208 | 14,583 | 8,750 |
| C. S. Sims, v. p. and g. m. | 20,000 | 13,750 | | |
| F. P. Gutelius, v. p. | | 11,666 | 22,500 | 13,700 |
| R. M. Olyphant, chm. ex. com. | 7,500 | 7,500 | | |
| J. T. Loree, g. m. | | 5,833 | 15,583 | 10,000 |
| **Chesapeake & Ohio** | | | | |
| Frank Trumbull, chm. of bd. | 21,400 | 21,400 | | |
| G. W. Stevens, pres. | 31,050 | 31,200 | 22,500 | |
| W. J. Harahan, pres. | | | 2,500 | 15,000 |
| H. E. Huntington, chm. of bd. | (No compensation 1920-21) | | | |
| **Denver & Rio Grande Western** | | | | |
| E. T. Jeffery, chm. of bd. | 35,000 | 29,166 | (Receivership) | |
| B. F. Bush, president | 13,180 | | (Receivership) | |
| H. U. Mudge, pres. | | 38,037 | (Receivership) | |
| E. L. Brown, pres. | | 10,766 | (Receivership) | |
| Vice-president | 25,000 | | (Receivership) | |
| J. Russell, g. m. | | | 16,666 | 10,000 |
| **Denver & Salt Lake** | | | | |
| Newman Erb, pres. | 9,000 | | | |
| Chas. Boettcher, pres. | | 3,131 | | |
| W. R. Freeman, recr. | | | 10,000 | 6,000 |
| **El Paso & Southwestern** | | | | |
| James Douglas, pres. | 12,000 | 12,000 | (Deceased June 25, 1918) | |
| T. M. Schumacher, v. p. | 25,000 | 53,333 | | |
| President | | | 53,333 | 33,333 |
| Arthur Curtiss James, v. p. | 18,000 | 18,000 | 28,333 | 18,666 |
| A. E. Sweet, v. p. and g. m. | | | 16,000 | 10,500 |
| W. A. Hawkins, gen. atty. | | | 22,916 | 15,000 |
| Wm. Church Osborn, g. coun'l. | 4,875 | 15,000 | 15,833 | 11,666 |
| **Duluth, South Shore & Atlantic** | | | | |
| A. B. Eldridge, pres. | 7,200 | 7,200 | | |
| **Florida East Coast** | | | | |
| W. H. Beardsley, pres. | 15,000 | 18,000 | 15,000 | 7,200 |
| **Fort Worth & Denver City** | | | | |
| Hale Holden, pres. | | | | 2,500 |
| **Georgia, Florida & Alabama** | | | | |
| Mrs. C. B. Williams, pres. | 5,850 | 6,000 | 5,000 | 2,833 |
| **Great Northern** | | | | |
| L. W. Hill, chm. of bd. | 4,166 | | 20,833 | 12,500 |
| C. R. Gray, pres. | 8,049 | | | |
| R. Budd, pres. | | | 25,000 | 15,000 |
| L. W. Hill, chm. and pres. | 20,833 | 50,000 | | |
| G. R. Martin, v. p. exec. dept., St. Paul | | | 16,666 | 10,000 |
| L. C. Gilman, v. p. exec. dept., Seattle | | | 3,194 | 12,500 |
| R. A. Jackson, v. p. and genl. counsel | 30,000 | | | |
| E. C. Lindley, v. p. and genl. counsel | | 20,000 | 16,666 | 10,000 |
| W. P. Kenney, v. p. and director of traffic | 18,000 | 18,000 | 20,833 | 12,500 |
| J. M. Gruber, v. p. operating department | 25,000 | 20,833 | | |
| Vice-president and gen. mgr. | | 4,166 | | |
| C. O. Jenks | | | 20,833 | 12,500 |
| **Gulf Coast Lines** | | | | |
| J. S. Pyeatt, pres. | | 15,000 | 20,833 | 12,500 |
| **Gulf, Mobile & Northern** | | | | |
| President | | 15,000 | 10,000 | 6,000 |
| **Hocking Valley** | | | | |
| Geo. W. Stevens, pres. | 4,950 | 4,800 | 5,000 | |
| W. J. Harahan, pres. | | | 403 | 3,000 |
| **Illinois Central and Yazoo & Mississippi Valley** | | | | |
| C. A. Peabody, chm. exec. com. | 12,000 | 12,000 | 10,000 | 6,000 |
| C. H. Markham, pres. | 50,000 | 60,000 | 62,500 | 37,500 |
| C. M. Kittle, senior v. p. | | | 25,000 | 15,000 |
| W. S. Horton, genl. coun'l. | 15,000 | 15,000 | 18,333 | 11,000 |
| L. W. Baldwin, v. p. | 20,000 | 20,000 | 25,000 | 15,000 |
| F. B. Bowes, v. p. | 15,000 | 20,000 | 20,833 | 12,500 |
| M. P. Blauvelt, v. p. | | | 20,833 | 12,500 |
| A. C. Mann, v. p. | 12,000 | 4,000 | 1,330 | 11,250 |
| A. S. Baldwin, v. p. | | | 16,666 | 10,000 |
| **International & Great Northern** | | | | |
| T. J. Freeman, pres. Jan. 1 to Aug. 10, 1914 | 9,153 | | | |
| **Kansas City Southern** | | | | |
| L. F. Loree, chm. | 30,000 | 30,000 | 28,750 | 17,500 |
| J. A. Edson, pres. | 25,000 | 25,000 | 26,083 | 16,000 |
| J. F. Holden, v. p. | 15,000 | 15,000 | 16,250 | 10,000 |
| S. W. Moore, genl. coun'l. | | | 14,166 | 10,000 |
| **Lehigh & New England** | | | | |
| S. D. Warriner, pres. | 3,000 | 5,000 | 5,333 | 6,000 |
| **Long Island** | | | | |
| Ralph Peters, pres. | 25,000 | 30,000 | 25,000 | 15,000 |
| **Louisville & Nashville** | | | | |
| H. Walters, chm. bd. | 15,000 | 15,000 | 12,000 | 7,500 |
| W. L. Mapother, pres. | 25,000 | 20,000 | 16,666 | 11,666 |

### Maine Central

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| Morris McDonald, pres. | 25,295 | 35,000 | 29,045 | 15,000 |

### Michigan Central

| | | | | |
|---|---|---|---|---|
| A. H. Smith, pres. | 9,680 | 8,303 | 11,600 | 6,945 |
| H. B. Ledyard, chm. bd. dir. | 30,000 | 30,000 | 25,000 | 12,500 |
| E. D. Bronner, g. m. | 15,000 | 3,125 | | |
| Vice president and g. m. | | 14,250 | | |
| Vice president | | | 19,033 | 12,500 |

### Midland Valley

| | | | | |
|---|---|---|---|---|
| C. E. Ingersoll, pres. | | 10,000 | 12,500 | 9,000 |

### Minneapolis & St. Louis

| | | | | |
|---|---|---|---|---|
| Newman Erb, pres. | 20,000 | | | |
| E. L. Brown, pres. | | 4,166 | | |
| W. H. Bremmer, pres. | | 12,000 | 19,666 | 12,499 |

### Minneapolis, St. Paul & Sault Ste. Marie

| | | | | |
|---|---|---|---|---|
| E. Pennington, pres. | $50,000 | $53,125 | $62,500 | $37,500 |
| W. L. Martin, v. p. | 20,000 | 20,000 | 16,666 | 10,000 |
| G. R. Huntington, g. m. | 17,000 | 20,000 | | |
| v. p. and g. m. | | | 16,666 | 10,000 |

### Missouri, Kansas & Texas Lines

| | | | | |
|---|---|---|---|---|
| C. E. Schaff, recr. | 50,000 | 50,000 | 41,666 | 25,000 |
| C. N. Whitehead, ch. op. offi. | | | 20,833 | 15,000 |
| J. M. Bryson, genl. con'l. | 15,000 | 24,000 | 20,000 | 13,500 |

### Missouri Pacific

| | | | | |
|---|---|---|---|---|
| Harry Bronner, ch. bd., and exec. com. | | | 8,333 | 5,000 |
| B. F. Bush, pres. | 50,000 | | | |
| Receiver | | 14,583 | | |
| President | | 29,166 | | |
| President | | | 41,666 | 25,000 |
| J. G. Drew, v. p. | | | 25,000 | 15,000 |
| E. J. Pearson, 1st v. p. | 25,000 | | | |
| E. J. White, v. p. and gen. sol. | | 105,000 | 20,833 | 12,500 |
| A. Robertson, ch. op. officer | | 10,416 | | |
| V. p. for operations | | 14,583 | 25,000 | 15,000 |

### Nashville, Chattanooga & St. Louis

| | | | | |
|---|---|---|---|---|
| John Howe Peyton, pres. | 12,000 | 12,000 | | |
| W. R. Cole, pres. | | | 15,000 | 9,000 |
| Chairman | | 6,000 | | |
| E. C. Lewis, chm. | 6,000 | | | |

### New Orleans, Great Northern

| | | | | |
|---|---|---|---|---|
| H. I. Miller, pres. | 9,999 | | | |
| A. C. Goodyear, pres. | | | 4,166 | 2,500 |

### New York Central

| | | | | |
|---|---|---|---|---|
| C. M. Depew, chm. | 22,596 | 22,580 | 20,833 | 12,500 |
| A. H. Smith, pres. | 48,338 | 44,224 | 44,724 | 26,775 |
| I. A. Place, v. p. | 35,000 | 32,000 | 18,296 | 13,837 |
| J. Carstensen, v. p. | 27,085 | 27,473 | 8,032 | 4,819 |
| A. T. Hardin, v. p. | 25,000 | 19,860 | 18,296 | 13,837 |
| A. H. Harris, genl. con'l. | 24,378 | | | |
| Vice president | | 24,106 | 18,296 | 13,837 |
| R. J. Cary, genl. con'l. | 10,838 | 10,987 | 20,833 | 12,500 |
| G. H. Ingalls, v. p. | | | 16,065 | 10,710 |
| C. F. Daly, v. p. | 25,765 | 26,218 | | |
| P. E. Crowley, v. p. | | 25,000 | 25,416 | 16,250 |
| W. J. Fripp, g. m. | 10,000 | 18,000 | 16,666 | 10,000 |
| R. D. Starbuck, asst. v. p. | | | 16,666 | 10,000 |

### Boston & Albany

| | | | | |
|---|---|---|---|---|
| A. H. Smith, pres. | 5,841 | 5,488 | 4,533 | 2,715 |
| H. M. Biscoe, v. p. | 18,000 | 20,000 | 17,083 | 11,250 |

### Pittsburgh & Lake Erie

| | | | | |
|---|---|---|---|---|
| A. H. Smith, pres. | 4,462 | 4,272 | 4,725 | 2,825 |
| J. M. Schoonmaker, v. p. | 25,000 | 25,000 | | |
| Chairman of board | | | 20,833 | 12,500 |
| J. B. Yohe, g. m. | 12,000 | 13,750 | | |
| V. p. and g. m. | | | 14,791 | 10,000 |

### New York, Chicago & St. Louis

| | | | | |
|---|---|---|---|---|
| O. P. Van Sweringen, chm. bd. | | 6,000 | 12,500 | 8,000 |
| W. H. Canniff, pres. | 25,000 | | | |
| J. J. Bernet, pres. | | 26,666 | 29,166 | 17,916 |
| H. D. Howe, v. p. & genl. con'l. | | | 16,666 | 10,416 |

### New York, New Haven & Hartford

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| Howard Elliott, chm. bd. | 34,541 | | | |
| Chm. Com. on Intercorporate Relations | | 12,583 | 14,749 | 9,000 |
| President | 27,166 | 17,666 | | |
| J. M. Hustis, pres. | 21,733 | | | |
| E. J. Pearson, pres. | | 33,333 | 41,666 | 24,999 |
| Asst. to pres. and v. p. | | 11,666 | | |
| E. G. Buckland, v. p. & genl. con'l. | 25,000 | 27,583 | 29,166 | 17,499 |
| B. Campbell, v. p. | 22,666 | 28,333 | 29,166 | 17,500 |
| A. R. Whaley, v. p. | 25,000 | 10,416 | | |
| C. L. Bardo, g. m. | 15,000 | 11,000 | 20,416 | 12,499 |
| Col. E. D. Hines, sp. asst. pres. | | | 8,000 | 12,000 |

### New York, Ontario & Western

| | | | | |
|---|---|---|---|---|
| J. B. Kerr, pres. | 20,000 | 20,000 | 16,666 | 10,000 |

### Norfolk & Western

| | | | | |
|---|---|---|---|---|
| L. E. Johnson, chm. bd. | | 50,000 | 41,666 | |
| N. D. Maher, pres. | 50,000 | 50,000 | 41,666 | 30,000 |
| A. C. Needles, v. p. oper. & traf. | 25,000 | 24,000 | 20,833 | 15,000 |
| T. W. Reath, genl. con'l. | 17,500 | 20,000 | 16,666 | 10,000 |

### Norfolk Southern

| | | | | |
|---|---|---|---|---|
| M. J. Perry, chm. bd. | 6,000 | 15,000 | | |
| J. H. Young, pres. & g. m. | 25,000 | 25,000 | 20,833 | 12,500 |

### Northern Pacific

| | | | | |
|---|---|---|---|---|
| W. P. Clough, chm. | 40,000 | | | |
| Howard Elliott, chm. | | 18,000 | 33,333 | 20,000 |
| J. M. Hannaford, vice chm. | | | 1,666 | 10,000 |
| Chas. Donnelly, pres. | | | 3,291 | 17,500 |
| Exec. vice president | | | 22,500 | |
| Asst. gen. counsel | 20,000 | 20,000 | | |
| W. T. Tyler, v. p. | | | 20,430 | 12,500 |
| C. W. Bunn, v. p. & g. m. | 30,000 | 30,000 | 25,000 | 15,000 |
| Geo. T. Reid, asst. to pres. and western counsel | 15,000 | 15,000 | 16,666 | 10,000 |
| J. G. Woodworth, v. p. | 18,000 | 22,500 | 20,833 | 12,500 |

### Land Dept.

| | | | | |
|---|---|---|---|---|
| J. M. Hannaford, pres. | | | 7,499 | |
| Chas. Donnelly, pres. | | | 833 | 7,500 |

### Northwestern Pacific

| | | | | |
|---|---|---|---|---|
| W. S. Palmer, pres. & g. m. | 8,000 | 10,000 | 8,333 | 5,000 |

### Pennsylvania

| | | | | |
|---|---|---|---|---|
| Samuel Rea, pres. | 47,796 | 47,742 | 47,352 | 28,411 |
| J. J. Turner, senior v. p. | | | 26,000 | 13,300 |
| W. W. Atterbury, v. p. oper. | 34,920 | 34,880 | 25,106 | 15,063 |
| G. D. Dixon, v. p. | 22,830 | 26,160 | 18,829 | 11,297 |
| Henry Tatnall, v. p. finance | 30,555 | 30,520 | 22,595 | 13,557 |
| W. H. Myers, v. p. purch. | 17,460 | 21,276 | | |
| G. L. Peck, v. p. personnel | | | 19,367 | 11,620 |
| Elisha Lee, v. p. eastern region | | | 23,350 | 14,010 |
| F. I. Gowen, genl. con'l. | 26,220 | 25,890 | 22,595 | 13,557 |
| C. B. Heiserman, genl. con'l. | | | 17,883 | 10,885 |

### Pennsylvania Co.

| | | | | |
|---|---|---|---|---|
| Samuel Rea, pres. | 11,625 | 10,875 | | |
| J. J. Turner, senior v. p. | 23,466 | 20,800 | | |
| G. L. Peck, v.p. in chge. transp. | 17,600 | 15,600 | | |
| V. p. under J. J. Turner, transp. | 1,173 | 13,000 | | |

### Pere Marquette

| | | | | |
|---|---|---|---|---|
| E. N. Brown, chm. bd. | | 21,667 | 17,667 | 12,000 |
| F. H. Alfred, pres. & g. m. | | 15,215 | 26,500 | 18,000 |
| S. L. Merriam, genl. coun'l. | 15,000 | 17,250 | 16,200 | 10,800 |

### Philadelphia & Reading

| | | | | |
|---|---|---|---|---|
| Geo. F. Baer, pres. | 6,666 | | | |
| Agnew T. Dice, pres. | | 35,540 | 20,833 | 12,499 |
| Edw. T. Stotesbury, chm. bd. | | 10,000 | 8,333 | 4,999 |
| Chas H. Ewing, v. p. | | | 20,833 | 12,499 |

### Richmond, Fredericksburg & Potomac

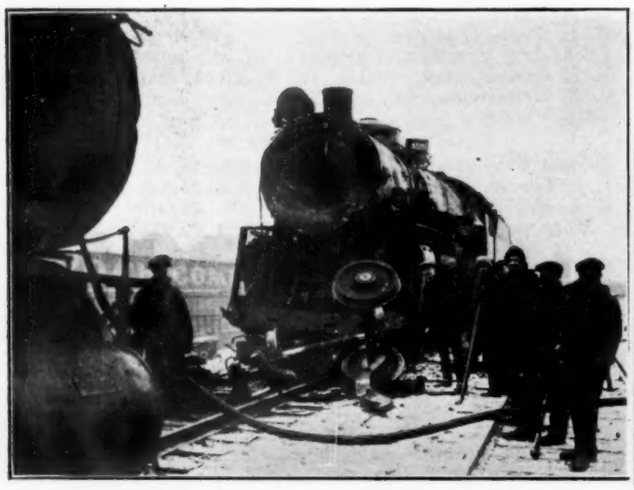
| | | | | |
|---|---|---|---|---|
| Wm. H. White, pres. | 15,000 | 15,000 | 6,250 | |
| Eppa Hunton, jr., pres. | | | 4,375 | 7,500 |

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| **St. Louis—San Francisco** | | | | |
| W. C. Nixon, recr. | 32,634 | | | |
| J. W. Lusk, recr. | 32,634 | | | |
| W. R. Biddle, recr. | 32,634 | | | |
| T. T. Fauntleroy, spec. master | 23,707 | | | |
| H. Ruhlender, chm. bd. | | 40,000 | | |
| E. N. Brown, chm. bd. | | | 26,500 | 16,500 |
| W. B. Biddle, pres. | | 39,879 | | |
| J. M. Kurn, pres. | | | 35,333 | 21,999 |
| E. D. Levy, v. p. oper. | | 27,270 | 13,250 | 8,499 |
| C. W. Hillard, v. p. finances | | 20,000 | 20,833 | 13,130 |
| W. F. Evans, genl. sol. | 18,000 | 25,000 | 21,583 | 13,249 |
| **Southern Pacific Lines** | | | | |
| J. Kruttschnitt, chairman | 75,000 | 87,500 | 83,333 | 49,999 |
| L. J. Spence, dir. of traffic | 25,000 | 35,625 | 35,416 | 26,666 |
| J. P. Blair, genl. conl. | 32,500 | 34,250 | 35,250 | 26,666 |
| A. D. McDonald, v. p. & con. | 15,000 | 26,250 | 31,250 | 26,666 |
| C. W. Jungen, mgr., A.S.S. Line | 19,000 | 21,500 | 20,000 | 12,000 |
| Wm. Sproule, pres. | 50,000 | 61,750 | 62,500 | 37,500 |
| Paul Shoup, v.p. & asst. to pres. | 15,000 | 15,000 | 25,000 | 15,000 |
| W. F. Herrin, v.p. & ch. con'l. | 36,000 | 36,000 | 30,000 | 18,000 |
| E. O. McCormick, v. p. | 30,000 | 30,000 | 12,500 | 7,500 |
| J. H. Dyer, g. m. P. S. | 18,375 | 23,541 | 16,666 | 10,000 |
| Epes Randolph, pres. A. E. R. R. Co. | 20,000 | 26,250 | 27,083 | 16,249 |
| W. R. Scott, pres. So. Pac. Lines in Texas and Louisiana | 20,000 | 26,250 | 30,000 | 18,000 |
| W. A. Worthington, v. p. & asst. to chairman | 12,000 | 13,500 | 18,749 | 12,500 |
| G. M. Buck, asst. con'l. | 13,500 | 15,750 | 16,666 | 10,000 |
| F. H. Wood, gen. atty. and com. counsel | 13,500 | 15,750 | 16,666 | 10,000 |
| E. T. Dumble, con. geologist | 10,000 | 12,000 | 16,667 | 10,000 |
| **St. Louis Southwestern** | | | | |
| F. H. Britton, pres. | 27,000 | | | |
| J. M. Herbert, pres. | | 19,833 | 29,333 | 17,600 |
| **Texas & Pacific** | | | | |
| Geo. J. Gould, pres. | 15,000 | | | |
| E. F. Kearney, 1st v. p. | 25,000 | | | |
| **Toledo, Peoria & Western** | | | | |
| E. N. Armstrong, pres. and recr. | 6,000 | 6,000 | 5,000 | 3,000 |
| **Toledo, St. Louis & Western** | | | | |
| W. L. Ross, pres. and recr. | 25,000 | 25,000 | 20,833 | 12,500 |
| **The Ulster & Delaware** | | | | |
| Ed Coykendall, pres. | 6,000 | 6,000 | 5,000 | 3,000 |

| | Year ended Dec. 31, 1914 | Year ended Dec. 31, 1917 | Ten months Mar. 1 to Dec. 31, 1920 | Six months Jan. 1 to June 30, 1921 |
|---|---|---|---|---|
| **Virginian** | | | | |
| R. Du Puy, pres. | | 4,000 | | |
| C. W. Huntington, pres. | | 16,666 | 20,833 | 12,500 |
| C. H. Hix, v. p. | | | 16,666 | 10,000 |
| **Wabash** | | | | |
| E. B. Pryor, recr. | 20,000 | | | |
| W. H. Williams, chm. bd. | | 15,000 | 20,833 | 12,500 |
| E. F. Kearney, pres. | | 50,000 | | |
| J. E. Taussig, pres. | | | 33,333 | 20,000 |
| W. C. Maxwell, v. p. | | 16,500 | 20,833 | 12,500 |
| H. Miller, g. m. | 20,000 | | | |
| W. S. Pierce, genl. con'l. | | 24,000 | 21,000 | 15,000 |
| J. L. Minnis, v. p. | | 21,250 | | |
| N. S. Brown, v. p. | | | 16,665 | 10,000 |
| S. E. Cotter, v. p. | | | 16,666 | 10,000 |
| **Western Pacific** | | | | |
| E. T. Jeffery, chm. bd. | 16,000 | | | |
| Alvin W. Krech, chm. bd. | | | 8,333 | 5,000 |
| Chas. M. Levey, pres. | | 30,000 | 25,000 | 15,000 |
| **Wheeling & Lake Erie** | | | | |
| W. M. Duncan, recr. | 14,700 | | | |
| President | | 15,000 | 12,500 | 7,500 |
| L. F. Loree, chm. bd. | | 10,000 | | |
| C. R. Gray, chm. bd. | | 5,000 | | |

The Baltimore & Ohio report was compiled on a different basis, as follows:

| | 1914 | 1917 | Mch. 1, 1920 | Dec. 31, 1920 | July 1, 1921 |
|---|---|---|---|---|---|
| O. G. Murray, chm. bd. | $25,000 | | | | |
| Daniel Willard, pres. | 75,000 | 75,000 | 75,000 | 75,000 | 67,500 |
| H. L. Bond, jr. gen. conl. | 25,000 | 25,000 | 30,000 | 30,000 | 30,000 |
| M. R. Waite, gen. sol. | | 8,000 | 15,000 | 20,000 | 20,000 |
| G. M. Shriver, sr. v. p. | | | 36,000 | 36,000 | 36,000 |
| Vice president | | 30,000 | | | |
| Second vice president | 20,000 | | | | |
| A. W. Thompson, v.p. oper. and maint. | 30,000 | | | | |
| J. M. Davis, v. p. | | 24,000 | | | |
| C. W. Galloway, v. p. | | | 33,000 | 33,000 | 33,000 |
| G. m. Western lines | | | 20,000 | | |
| G. H. Emerson, chief of m. p. and equip. | | | 25,000 | 25,000 | 25,000 |
| R. B. Begien, g. m. Eastern lines | | 15,000 | | | |
| Western lines | | | 20,000 | 20,000 | 20,000 |
| S. Ennes, g.m. East. lines | | | 20,000 | 20,000 | |
| E. W. Scheer, g.m. " " | | | | | 20,000 |



*Underwood & Underwood.*

**The Navajo Limited: 23d Street, Chicago, December 16. Eight Persons Injured**

*P. & A. Photo*

**Union Pacific Locomotive No. 7000 About to Start from Cheyenne**

# General News Department

**The American Society of Civil Engineers** will hold its seventieth annual meeting at the Engineering Societies' Building, New York, on January 17, 18 and 19, 1923.

**Seven sleeping cars overturned** and 40 persons injured, none seriously, is the substance of a press dispatch of December 20 reporting the derailment near Allenhurst, Ga., of southbound passenger train No. 83 of the Atlantic Coast Line.

**Senator Capper's resolution** calling upon the Interstate Commerce Commission to furnish detailed information concerning excess earnings of the railroads that have earned net returns of over 6 per cent, was adopted by the Senate on December 15.

**One trainman was killed** and two trainmen and 15 passengers were injured on December 14, when Minneapolis, St. Paul & Sault Ste. Marie passenger train No. 3, northbound, from Chicago to Minneapolis, collided with a southbound freight train near Thorpe, Wis.

**A bill** to abolish the Railroad Labor Board by repealing sections 300 to 316 of the Transportation Act was introduced in the Senate on December 16 by Senator King of Utah.

**S. Davies Warfield,** president of the National Association of Owners of Railroad Securities, has issued a statement outlining the association's program for effecting economies in railroad operation and urging that Congress act at the present session on the recommendations made by President Harding in his recent address to Congress, many of which were based on the suggestions of the association.

**The Transportation Brotherhoods' National Bank** opened for business at Minneapolis, Minn., on December 19. This bank is owned by members of the brotherhoods of railroad enginemen and trainmen and is the sixth bank in the United States owned and operated by members of railroad labor unions. The president of the bank is Warren S. Stone, chief of the locomotive engineers, and the executive vice-president is W. P. Kennedy, general chairman, on the Chicago, Milwaukee & St. Paul Railway of the Brotherhood of Railroad Trainmen.

## A Correction

In last week's issue of the *Railway Age* it was announced that the next annual meeting of Division VI, Purchases & Stores, of the American Railway Association would be held in Chicago on May 22, 1924. This is incorrect. The meeting will be held on May 22, 1923.

## Eastern Presidents' Conference to Broaden Scope of Public Relations Work

The Eastern Presidents' Conference has decided to broaden the scope of its public relations work and to this end has retained Robert S. Binkerd, who has resigned as assistant to the chairman of the Association of Railway Executives, to take charge of the work. Mr. Binkerd will enter upon his new duties on January 1, 1923, and will have his headquarters at 143 Liberty street, New York.

## M. & N. A. Strikers Lose All Rights

Former employees of the Missouri & North Arkansas who went on strike about two months ago following their refusal to accept the wage offered by the road under the decision of the Labor Board, have lost all rights as employees of the road, according to a ruling of the Federal court at Harrison, Ark., in which the temporary injunction against picketing was made permanent. All relationship that the former employees may have sustained to the company has ceased, according to the decision. The temporary injunction which is now made permanent was issued in July, and covered all the road's property in Arkansas.

## I. C. C. to Hold Hearing on New York Terminal Plan

The Interstate Commerce Commission has ordered an investigation "in the matter of efficient, economical and joint use of terminals of common carriers in the Port of New York District and the cost to carriers of operating the terminals in performance of common-carrier services." The railroads serving the port are made respondents and the investigation is instituted for the purpose of determining what, if any, order should be made by the commission in connection with the carrying out of the comprehensive plan of the Port of New York Authority for the development of the port of New York. No date has been announced for any public hearing. The Port Authority proposes the construction of extensive belt railroads in New Jersey to connect the different railroad yards and ocean terminals, and its members have complained that the railroads are lacking in sympathy toward the project.

## Convictions for the Needles Tie-Up

In the United States District Court at Los Angeles, California, on December 20, eight railroad employees on trial for conspiracy to interfere with interstate commerce were found guilty, by a jury, and are to be arraigned for sentence on December 26. The charge was that defendants had plotted to tie up traffic on the Atchison, Topeka & Santa Fe [at Needles, Calif.] last August by causing a walkout of trainmen. More than a thousand passengers were marooned several days, in intensely hot weather, and much freight and mail were delayed. The defendants said the walkout was justified because of defective equipment and the presence of armed guards at terminals. The Government contended that the walkout was brought about to assist the shopmen then on strike.

## Telegraph and Telephone Section Elects Officers

The officers chosen for the ensuing year by the Telegraph & Telephone section of the American Railway Association at its meeting in Chicago last week were as follows: Chairman, R. F. Finley, superintendent telegraph, New York Central; first vice-chairman, I. C. Forshee, telegraph and telephone engineer, Pennsylvania System; second vice-chairman, G. D. Hood, superintendent of telegraph, Chicago, Rock Island & Pacific; members of the Committee of Direction: J. H. Brennan, superintendent telegraph, St. Louis-San Francisco; G. A. Cellar, general superintendent telegraph, Pennsylvania System; C. A. Plumly, superintendent telegraph, Baltimore & Ohio; H. A. Shepard, general superintendent electric transmission and communication, New York, New Haven & Hartford; C. E. Davies, general traffic superintendent, Canadian National Telegraphs; W. Rogers, telegraph and telephone engineer, Missouri Pacific.

It was decided that the officers of the Railway Telegraph & Telephone Appliance Association, which met in conjunction with the Telegraph and Telephone section should retain office during the coming year. These officers are as follows: Chairman, J. Warren Young, Kerite Insulated Wire & Cable Co., New York; vice-chairman, F. W. Bayles, New York Telephone Company, New York; secretary and treasurer, G. A. Nelson, Waterbury Battery Company, New York; members of the executive committee, B. A. Kaiser, American Telegraph and Telephone Company, New York; W. T. Kyle, Page Wire & Steel Company, New York; J. W. Hackett, Okonite Company, New York; Wallace L. Cook, Reliable Electric Company, Chicago; E. V. Adams, Western Electric Company, New York, and D. H. Morris, Ohio Bell Telephone Company, Columbus, Ohio.

# Operating Statistics of Large Steam Roads—Selected Items for the Month of October, 1922,

| Region, road and year | Average miles of road operated | Train-miles | Locomotive-miles: Principal and helper | Locomotive-miles: Light | Car-miles: Loaded (thousands) | Car-miles: Per cent loaded | Ton-miles (thousands): Gross, Excluding locomotive and tender | Ton-miles (thousands): Net, Revenue and non-revenue | Average number of locomotives on line daily: Serviceable | Unserviceable | Per cent unserviceable | Stored |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New England Region:** | | | | | | | | | | | | |
| Boston & Albany | 1922 394 | 311,458 | 330,022 | 31,598 | 5,803 | 72.5 | 295,603 | 126,328 | 109 | 33 | 23.1 | ... |
| | 1921 394 | 248,213 | 270,090 | 33,718 | 5,001 | 70.3 | 251,120 | 102,469 | 115 | 29 | 19.9 | ... |
| Boston & Maine | 1922 2,455 | 648,629 | 727,658 | 69,209 | 14,611 | 73.3 | 733,237 | 309,618 | 316 | 134 | 29.8 | 12 |
| | 1921 2,469 | 593,320 | 665,637 | 59,011 | 13,871 | 74.0 | 686,186 | 291,106 | 342 | 117 | 25.4 | 48 |
| N. Y., New H. & Hartf | 1922 1,973 | 477,356 | 517,941 | 36,405 | 12,904 | 77.1 | 626,803 | 284,891 | 279 | 88 | 24.1 | 4 |
| | 1921 1,977 | 451,309 | 493,433 | 31,729 | 12,104 | 71.1 | 603,556 | 261,582 | 300 | 88 | 22.7 | 41 |
| **Great Lakes Region:** | | | | | | | | | | | | |
| Delaware & Hudson | 1922 887 | 368,416 | 503,554 | 40,347 | 9,604 | 67.1 | 629,985 | 328,634 | 250 | 61 | 19.5 | 62 |
| | 1921 880 | 362,917 | 483,942 | 37,270 | 9,971 | 66.3 | 633,178 | 323,469 | 277 | 37 | 11.9 | 115 |
| Del., Lack. & Wn | 1922 994 | 487,529 | 609,938 | 122,159 | 13,653 | 65.2 | 830,446 | 394,632 | 254 | 110 | 30.3 | 3 |
| | 1921 995 | 583,323 | 723,502 | 133,266 | 17,772 | 68.4 | 979,579 | 454,304 | 301 | 55 | 15.5 | 33 |
| Erie (inc. Chic. & Erie) | 1922 2,309 | 940,719 | 1,066,527 | 53,573 | 35,314 | 73.4 | 2,035,631 | 983,870 | 456 | 295 | 39.3 | 1 |
| | 1921 2,259 | 1,194,502 | 1,332,813 | 56,565 | 40,610 | 66.4 | 2,415,566 | 1,076,502 | 561 | 179 | 24.2 | 16 |
| Lehigh Valley | 1922 1,317 | 490,537 | 542,202 | 65,522 | 12,470 | 67.6 | 780,592 | 400,235 | 307 | 236 | 43.4 | 10 |
| | 1921 1,316 | 654,605 | 721,706 | 71,576 | 18,774 | 64.2 | 1,152,523 | 549,185 | 428 | 115 | 21.2 | 99 |
| Michigan Central | 1922 1,827 | 579,701 | 587,854 | 28,645 | 21,309 | 74.1 | 1,023,399 | 459,999 | 278 | 120 | 30.1 | 26 |
| | 1921 1,829 | 486,045 | 497,301 | 21,976 | 15,995 | 72.0 | 804,750 | 335,101 | 331 | 81 | 19.7 | 81 |
| New York Central | 1922 6,486 | 2,437,580 | 2,744,521 | 216,348 | 91,877 | 70.1 | 5,326,063 | 2,551,020 | 1,035 | 41 | 40.8 | 11 |
| | 1921 6,466 | 2,065,715 | 2,292,377 | 166,715 | 74,834 | 67.9 | 4,210,865 | 1,914,271 | 1,127 | 617 | 35.4 | 221 |
| N. Y., Chic., & St. L | 1922 1,225 | 525,229 | 529,973 | 4,209 | 14,265 | 72.3 | 762,589 | 334,759 | 150 | 76 | 33.4 | 11 |
| | 1921 1,225 | 459,907 | 462,689 | 1,312 | 13,642 | 72.0 | 683,169 | 285,687 | 184 | 66 | 26.5 | 59 |
| Pere Marquette | 1922 2,182 | 359,251 | 366,146 | 7,404 | 9,565 | 76.5 | 489,647 | 238,499 | 151 | 59 | 28.2 | ... |
| | 1921 2,196 | 378,377 | 389,805 | 7,872 | 9,828 | 73.4 | 521,250 | 240,797 | 164 | 47 | 22.2 | 7 |
| Pitts. & Lake Erie | 1922 228 | 150,708 | 157,482 | 1,180 | 5,597 | 68.3 | 395,694 | 236,509 | 60 | 19 | 24.4 | ... |
| | 1921 228 | 93,428 | 97,353 | 585 | 3,249 | 63.0 | 234,918 | 132,693 | 57 | 28 | 33.3 | 7 |
| Wabash | 1922 2,418 | 529,410 | 551,485 | 7,668 | 16,556 | 79.0 | 854,844 | 412,227 | 248 | 95 | 27.6 | ... |
| | 1921 2,418 | 633,635 | 662,598 | 8,552 | 18,394 | 75.2 | 948,597 | 434,627 | 279 | 64 | 18.6 | 31 |
| **Ohio-Indiana-Allegheny Region:** | | | | | | | | | | | | |
| Baltimore & Ohio | 1922 5,235 | 1,939,187 | 2,226,668 | 144,315 | 57,669 | 72.2 | 3,315,362 | 1,699,628 | 999 | 350 | 25.9 | ... |
| | 1921 5,185 | 1,842,781 | 1,996,076 | 152,975 | 48,440 | 65.0 | 3,055,823 | 1,533,669 | 1,030 | 362 | 26.0 | 174 |
| Central R. R. of N. J | 1922 692 | 329,347 | 361,322 | 44,782 | 7,686 | 64.7 | 487,241 | 243,755 | 213 | 46 | 17.6 | 4 |
| | 1921 679 | 295,995 | 334,412 | 44,490 | 6,744 | 60.9 | 444,701 | 219,326 | 209 | 51 | 19.5 | 11 |
| Chicago & Eastern Ill | 1922 945 | 223,493 | 225,169 | 4,509 | 5,905 | 69.7 | 342,417 | 177,610 | 91 | 81 | 47.1 | 4 |
| | 1921 1,131 | 274,317 | 276,709 | 4,016 | 6,870 | 62.3 | 429,980 | 217,941 | 128 | 47 | 26.9 | 37 |
| Clev., Cin. Chic. & St. L | 1922 2,378 | 699,583 | 721,563 | 5,918 | 22,571 | 68.7 | 1,351,893 | 675,898 | 267 | 181 | 40.3 | ... |
| | 1921 2,387 | 679,165 | 710,354 | 2,905 | 20,474 | 64.9 | 1,220,648 | 577,571 | 331 | 120 | 26.7 | 42 |
| Elgin, Joliet & Ea.[1] | 1922 459 | 132,079 | 144,812 | 7,813 | 3,940 | 65.8 | 318,282 | 176,262 | 84 | 22 | 20.4 | 12 |
| | 1921 456 | 103,892 | 114,557 | 6,998 | 3,278 | 66.5 | 242,803 | 130,266 | 99 | 9 | 8.5 | 36 |
| Long Island | 1922 394 | 51,897 | 61,422 | 11,026 | 720 | 63.4 | 41,031 | 16,761 | 37 | 12 | 25.1 | ... |
| | 1921 395 | 48,890 | 54,832 | 9,544 | 625 | 60.6 | 35,433 | 13,830 | 37 | 9 | 20.2 | 1 |
| Pennsylvania System | 1922 10,902 | 5,006,921 | 5,515,809 | 412,882 | 136,575 | 68.9 | 8,846,838 | 4,600,561 | 2,464 | 832 | 25.3 | 10 |
| | 1921 10,875 | 4,603,675 | 5,041,348 | 380,708 | 124,151 | 65.1 | 8,373,895 | 4,261,914 | 2,561 | 932 | 26.7 | 495 |
| Phila. & Reading | 1922 1,119 | 672,840 | 766,631 | 96,407 | 18,075 | 69.0 | 1,160,224 | 627,932 | 363 | 67 | 15.5 | 87 |
| | 1921 1,119 | 577,160 | 654,573 | 83,027 | 15,096 | 64.5 | 1,010,602 | 539,633 | 361 | 78 | 17.7 | 144 |
| **Pocahontas Region:** | | | | | | | | | | | | |
| Chesapeake & Ohio | 1922 2,551 | 640,628 | 706,176 | 16,439 | 20,497 | 63.3 | 1,460,288 | 807,445 | 361 | 169 | 31.8 | 10 |
| | 1921 2,548 | 759,300 | 829,763 | 24,065 | 23,127 | 58.8 | 1,757,408 | 958,638 | 468 | 90 | 16.1 | 88 |
| Norfolk & Western | 1922 2,228 | 754,760 | 970,918 | 35,363 | 19,502 | 61.3 | 1,508,185 | 817,277 | 543 | 172 | 24.1 | 46 |
| | 1921 2,222 | 796,648 | 979,489 | 36,351 | 22,911 | 61.0 | 1,704,232 | 936,383 | 602 | 106 | 15.0 | 178 |
| **Southern Region:** | | | | | | | | | | | | |
| Atlantic Coast Line | 1922 4,930 | 666,901 | 669,993 | 11,007 | 16,322 | 73.3 | 806,568 | 354,009 | 330 | 102 | 23.6 | 13 |
| | 1921 4,899 | 564,675 | 569,960 | 8,647 | 12,873 | 66.0 | 652,649 | 256,434 | 289 | 126 | 30.4 | 62 |
| Central of Georgia | 1922 1,907 | 272,597 | 276,559 | 5,552 | 5,775 | 77.5 | 290,455 | 137,467 | 117 | 16 | 12.0 | ... |
| | 1921 1,899 | 223,985 | 224,804 | 3,859 | 5,146 | 74.3 | 249,495 | 112,463 | 117 | 23 | 16.3 | 8 |
| I. C. (inc. Y. & M. V.) | 1922 6,135 | 2,110,301 | 2,125,006 | 50,384 | 60,786 | 66.5 | 3,724,575 | 1,760,248 | 731 | 91 | 11.1 | 6 |
| | 1921 6,151 | 1,813,792 | 1,820,960 | 38,383 | 51,042 | 64.6 | 3,146,105 | 1,442,999 | 728 | 88 | 10.7 | 16 |
| Louisville & Nashville | 1922 5,021 | 1,504,859 | 1,606,073 | 62,373 | 27,852 | 68.3 | 1,671,219 | 827,877 | 528 | 159 | 23.2 | ... |
| | 1921 5,020 | 1,662,242 | 1,782,965 | 57,983 | 29,659 | 62.5 | 1,896,413 | 916,114 | 581 | 83 | 12.5 | 12 |
| Seaboard Air Line | 1922 3,537 | 496,469 | 501,924 | 10,385 | 11,044 | 74.0 | 562,840 | 248,801 | 172 | 104 | 37.6 | ... |
| | 1921 3,537 | 431,801 | 442,084 | 8,305 | 9,507 | 74.0 | 465,459 | 195,408 | 167 | 89 | 34.7 | ... |
| Southern Ry. | 1922 6,942 | 1,524,761 | 1,574,525 | 47,686 | 33,941 | 73.5 | 1,739,820 | 783,578 | 798 | 245 | 23.5 | ... |
| | 1921 6,942 | 1,372,170 | 1,401,764 | 36,125 | 31,083 | 70.4 | 1,585,680 | 672,590 | 884 | 234 | 20.9 | 36 |
| **Northwestern Region:** | | | | | | | | | | | | |
| Chic. & N. Wn | 1922 8,393 | 1,855,536 | 1,942,998 | 27,692 | 43,344 | 60.2 | 2,451,427 | 1,031,502 | 729 | 299 | 29.1 | ... |
| | 1921 8,378 | 1,788,642 | 1,858,385 | 29,285 | 39,161 | 63.0 | 2,266,132 | 985,420 | 786 | 282 | 26.4 | 9 |
| Chic., Milw. & St. P | 1922 11,027 | 1,955,512 | 2,009,658 | 82,504 | 49,458 | 67.3 | 2,806,376 | 1,333,204 | 804 | 276 | 25.5 | 29 |
| | 1921 10,992 | 1,758,207 | 1,812,212 | 69,115 | 44,795 | 65.0 | 2,501,508 | 1,127,810 | 864 | 218 | 20.2 | 111 |
| Chic., St. P., Minn. & Om | 1922 1,726 | 330,852 | 355,179 | 16,223 | 6,519 | 76.3 | 342,339 | 154,594 | 145 | 71 | 32.9 | 16 |
| | 1921 1,726 | 356,383 | 374,830 | 16,028 | 7,408 | 72.6 | 380,561 | 167,774 | 152 | 61 | 28.7 | 14 |
| Great Northern | 1922 8,255 | 1,187,054 | 1,217,445 | 49,035 | 33,468 | 67.2 | 1,973,539 | 964,535 | 549 | 214 | 28.0 | 11 |
| | 1921 8,162 | 1,287,869 | 1,324,973 | 43,484 | 37,181 | 63.1 | 2,218,184 | 960,561 | 633 | 153 | 19.5 | 121 |
| Minn., St. P. & S. Ste. M. | 1922 4,355 | 707,274 | 719,410 | 12,403 | 14,746 | 76.6 | 849,730 | 425,697 | 341 | 63 | 15.6 | 2 |
| | 1921 4,359 | 579,037 | 615,536 | 9,018 | 14,251 | 74.9 | 708,614 | 340,026 | 349 | 56 | 13.9 | 6 |
| Northern Pacific | 1922 6,388 | 1,050,906 | 1,090,418 | 53,982 | 29,038 | 74.7 | 1,586,375 | 771,614 | 564 | 154 | 21.5 | 44 |
| | 1921 6,420 | 1,096,526 | 1,144,694 | 68,232 | 31,900 | 69.1 | 1,802,429 | 812,038 | 583 | 144 | 19.8 | 65 |
| Oreg.-Wash. R. R. & Nav. | 1922 2,143 | 266,668 | 298,115 | 39,617 | 6,432 | 76.2 | 361,393 | 187,613 | 134 | 38 | 22.2 | 4 |
| | 1921 2,150 | 268,684 | 301,929 | 43,200 | 6,405 | 67.5 | 378,356 | 173,962 | 137 | 30 | 18.0 | ... |
| **Central Western Region:** | | | | | | | | | | | | |
| Atch., Top. & Santa Fe | 1922 9,798 | 2,165,633 | 2,265,106 | 111,687 | 61,153 | 65.2 | 3,473,643 | 1,269,485 | 744 | 228 | 23.5 | 19 |
| | 1921 9,763 | 2,022,714 | 2,167,743 | 104,497 | 57,286 | 65.0 | 3,235,278 | 1,154,739 | 773 | 212 | 21.5 | 55 |
| Chicago & Alton | 1922 1,010 | 277,415 | 281,674 | 5,865 | 6,741 | 72.5 | 383,672 | 196,169 | 91 | 54 | 37.2 | 1 |
| | 1921 1,010 | 390,775 | 399,228 | 5,274 | 8,578 | 63.0 | 519,787 | 216,102 | 117 | 36 | 23.5 | 8 |
| Chic., Burl. & Quincy | 1922 9,326 | 1,935,157 | 2,018,831 | 93,986 | 55,043 | 65.4 | 3,279,153 | 1,568,320 | 774 | 242 | 23.8 | 1 |
| | 1921 9,326 | 1,855,435 | 1,950,899 | 102,450 | 50,623 | 64.1 | 3,019,783 | 1,422,780 | 683 | 255 | 27.2 | 33 |
| Chic., Rock I. & Pac | 1922 7,635 | 1,309,800 | 1,333,527 | 20,824 | 31,476 | 76.1 | 1,598,413 | 740,957 | 526 | 200 | 27.5 | 19 |
| | 1921 7,661 | 1,482,515 | 1,507,431 | 13,930 | 33,705 | 71.2 | 1,791,562 | 819,175 | 591 | 165 | 21.8 | 14 |
| Denver & R. G. Wn | 1922 2,593 | 332,451 | 402,025 | 76,695 | 7,065 | 65.9 | 413,754 | 190,652 | 224 | 109 | 32.6 | 2 |
| | 1921 2,593 | 353,356 | 447,277 | 92,546 | 7,678 | 62.3 | 450,507 | 195,472 | 235 | 71 | 23.2 | 2 |
| Oreg. Short Line | 1922 2,367 | 509,070 | 531,445 | 35,724 | 11,126 | 65.6 | 682,439 | 309,969 | 176 | 62 | 26.0 | 4 |
| | 1921 2,359 | 512,290 | 530,574 | 37,643 | 11,979 | 60.2 | 759,343 | 322,085 | 193 | 43 | 18.2 | 14 |
| Southern Pacific | 1922 6,982 | 1,361,526 | 1,538,656 | 278,886 | 40,645 | 71.9 | 2,222,311 | 962,874 | 635 | 190 | 23.0 | 6 |
| | 1921 6,975 | 1,319,919 | 1,508,111 | 266,580 | 38,153 | 68.2 | 2,172,652 | 913,423 | 616 | 182 | 22.8 | 13 |
| Union Pacific | 1922 3,707 | 1,655,648 | 1,693,517 | 133,559 | 46,337 | 69.3 | 2,521,671 | 1,026,797 | 458 | 122 | 21.1 | 20 |
| | 1921 3,615 | 1,733,778 | 1,755,100 | 92,124 | 46,098 | 63.0 | 2,700,650 | 1,048,623 | 438 | 108 | 19.7 | 2 |
| **Southwestern Region:** | | | | | | | | | | | | |
| Gulf, Colo. & S. Fe | 1922 1,895 | 271,965 | 279,020 | 6,116 | 7,759 | 71.0 | 406,455 | 176,768 | 119 | 30 | 20.1 | 3 |
| | 1921 1,895 | 257,751 | 265,062 | 4,436 | 6,658 | 65.5 | 373,373 | 161,740 | 123 | 35 | 22.4 | 23 |
| Mo., Kans. & Tex | 1922 1,658 | 315,839 | 316,433 | 6,223 | 9,304 | 69.5 | 495,279 | 215,262 | 97 | 92 | 48.6 | 7 |
| | 1921 1,709 | 290,637 | 290,656 | 6,638 | 7,910 | 63.6 | 441,312 | 181,738 | 131 | 46 | 26.2 | 37 |
| Mo., Kans. & Tex. of Tex. | 1922 1,738 | 244,767 | 249,962 | 3,145 | 5,235 | 73.6 | 265,505 | 113,769 | 75 | 68 | 47.6 | 4 |
| | 1921 1,740 | 243,393 | 248,234 | 3,634 | 5,183 | 64.0 | 286,568 | 115,438 | 97 | 38 | 28.2 | 10 |
| Missouri Pacific | 1922 7,112 | 1,041,157 | 1,049,370 | 35,076 | 25,514 | 73.3 | 1,385,042 | 651,747 | 378 | 217 | 36.5 | ... |
| | 1921 7,264 | 1,256,553 | 1,268,619 | 38,575 | 31,041 | 68.7 | 1,748,084 | 797,150 | 420 | 173 | 29.2 | ... |
| St. Louis-San Francisco | 1922 4,683 | 735,846 | 743,228 | 13,781 | 13,092 | 70.2 | 709,413 | 319,147 | 307 | 154 | 33.5 | ... |
| | 1921 4,683 | 842,571 | 854,333 | 13,249 | 16,273 | 68.4 | 895,830 | 399,818 | 352 | 101 | 22.3 | 14 |
| Southern Pacific Lines[1] (in Texas and La.) | 1922 3,710 | 618,597 | 621,534 | 7,673 | 14,045 | 69.4 | 763,315 | 338,066 | 186 | 106 | 36.2 | 2 |
| | 1921 3,647 | 575,418 | 578,770 | 4,742 | 11,745 | 64.7 | 719,163 | 314,386 | 193 | 103 | 34.7 | 6 |
| Texas & Pacific | 1922 1,953 | 250,955 | 250,995 | 6,995 | 6,505 | 72.5 | 332,398 | 139,679 | 103 | 96 | 48.4 | 6 |
| | 1921 1,953 | 283,360 | 283,360 | 2,569 | 6,651 | 67.3 | 353,101 | 140,400 | 130 | 65 | 33.1 | 20 |

[1]No passenger-train service.

*Compiled by the Bureau of Statistics of the Interstate Commerce Commission. Subject to revision.*

## Compared with October, 1921, for Roads with Annual Operating Revenues above $25,000,000.

| Region, road and year | Average number of freight cars on line daily: Home | Foreign | Total | Per cent unserviceable | Stored | Gross tons per train, excluding locomotive and tender | Net tons per train | Net tons per loaded car | Net ton-miles per car-day | Car-miles per car-day | Net ton-miles per mile of road per day | Pounds of coal per 1,000 gross ton-miles, including locomotive and tender | Passenger service: Train-miles | Passenger-train car-miles |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New England Region:** | | | | | | | | | | | | | | |
| Boston & Albany 1922 | 1,801 | 7,169 | 8,970 | 4.1 | .... | 949 | 406 | 21.8 | 454 | 28.8 | 10,345 | 227 | 302,243 | 1,931,014 |
| 1921 | 3,022 | 4,751 | 7,773 | 7.8 | 364 | 1,012 | 413 | 20.5 | 425 | 29.5 | 8,391 | 209 | 301,951 | 1,960,439 |
| Boston & Maine 1922 | 13,521 | 21,290 | 34,811 | 13.6 | .... | 1,130 | 477 | 21.2 | 287 | 18.5 | 4,068 | 172 | 806,689 | 4,376,381 |
| 1921 | 16,933 | 16,404 | 33,337 | 18.7 | 739 | 1,157 | 491 | 21.0 | 282 | 18.1 | 3,804 | 142 | 803,782 | 4,403,021 |
| N. Y., New H. & Hartf. 1922 | 18,402 | 30,837 | 49,239 | 18.9 | 73 | 1,313 | 597 | 22.1 | 187 | 11.0 | 4,658 | 196 | 1,004,246 | 6,380,045 |
| 1921 | 22,805 | 17,432 | 40,237 | 22.9 | 561 | 1,337 | 580 | 21.6 | 210 | 13,6 | 4,269 | 161 | 1,024,394 | 6,479,665 |
| **Great Lakes Region:** | | | | | | | | | | | | | | |
| Delaware & Hudson 1922 | 8,261 | 9,441 | 17,702 | 7.9 | .... | 1,710 | 892 | 34.2 | 599 | 26.1 | 11,952 | 208 | 190,857 | 996,788 |
| 1921 | 9,518 | 7,084 | 16,602 | 10.5 | 95 | 1,745 | 891 | 32.4 | 629 | 29.2 | 11,852 | 182 | 189,965 | 961,429 |
| Del., Lack. & Wn. 1922 | 10,406 | 12,052 | 22,458 | 6.3 | 30 | 1,703 | 809 | 28.9 | 567 | 30.1 | 12,806 | 210 | 485,302 | 3,505,864 |
| 1921 | 16,488 | 9,176 | 25,664 | 14.3 | .... | 1,679 | 779 | 25.6 | 571 | 32.7 | 14,735 | 174 | 497,147 | 3,597,032 |
| Erie (inc. Chic. & Erie). 1922 | 23,739 | 37,712 | 61,451 | 11.9 | 2,992 | 2,164 | 1,046 | 27.9 | 516 | 25.3 | 13,743 | 144 | 574,647 | 4,113,358 |
| 1921 | 34,941 | 21,065 | 56,006 | 19.7 | 1,222 | 2,022 | 901 | 26.5 | 620 | 35.3 | 15,374 | 141 | 681,595 | 5,009,465 |
| Lehigh Valley 1922 | 23,879 | 17,463 | 41,342 | 7.6 | .... | 1,591 | 816 | 32.1 | 312 | 14.4 | 9,805 | 215 | 346,000 | 2,653,924 |
| 1921 | 28,594 | 9,649 | 38,243 | 16.9 | 1,135 | 1,761 | 839 | 29.3 | 463 | 24.6 | 13,458 | 165 | 356,513 | 2,685,495 |
| Michigan Central 1922 | 8,204 | 21,818 | 30,022 | 10.3 | .... | 1,765 | 794 | 21.6 | 494 | 30.9 | 8,124 | 133 | 569,365 | 5,403,952 |
| 1921 | 16,882 | 16,059 | 32,941 | 21.7 | .... | 1,656 | 689 | 21.0 | 328 | 21.8 | 5,909 | 129 | 585,346 | 5,577,443 |
| New York Central 1922 | 55,101 | 90,886 | 145,987 | 11.7 | .... | 2,185 | 1,047 | 27.8 | 564 | 29.0 | 12,688 | 129 | 2,464,818 | 20,148,998 |
| 1921 | 84,302 | 55,694 | 139,996 | 21.5 | 4,748 | 2,039 | 927 | 25.6 | 441 | 25.4 | 9,551 | 121 | 2,450,078 | 19,927,446 |
| N. Y., Chic. & St. L. 1922 | 2,954 | 11,499 | 14,453 | 14.4 | .... | 1,452 | 637 | 23.5 | 747 | 44.0 | 8,812 | 136 | 151,807 | 820,673 |
| 1921 | 6,020 | 8,616 | 14,636 | 16.8 | 333 | 1,485 | 621 | 20.9 | 630 | 41.7 | 7,520 | 118 | 152,865 | 724,023 |
| Pere Marquette 1922 | 6,642 | 17,361 | 24,003 | 12.7 | .... | 1,363 | 664 | 24.9 | 321 | 16.8 | 3,526 | 151 | 259,162 | 1,300,019 |
| 1921 | 10,267 | 12,389 | 22,656 | 17.4 | .... | 1,378 | 636 | 24.5 | 343 | 19.1 | 3,537 | 137 | 290,517 | 1,433,670 |
| Pitts. & Lake Erie 1922 | 10,788 | 11,180 | 21,968 | 31.6 | .... | 2,626 | 1,569 | 42.3 | 347 | 12.0 | 33,474 | 77 | 115,664 | 558,726 |
| 1921 | 18,849 | 8,106 | 26,955 | 41.6 | 1,635 | 2,514 | 1,420 | 40.8 | 159 | 6.2 | 18,780 | 92 | 107,718 | 563,317 |
| Wabash 1922 | 6,956 | 15,679 | 22,635 | 8.8 | .... | 1,615 | 779 | 24.9 | 587 | 29.9 | 5,500 | 159 | 409,968 | 2,502,792 |
| 1921 | 11,505 | 12,526 | 24,031 | 12.0 | 538 | 1,497 | 686 | 23.6 | 583 | 32.8 | 5,799 | 157 | 526,307 | 2,807,014 |
| **Ohio-Indiana-Allegheny Region:** | | | | | | | | | | | | | | |
| Baltimore & Ohio 1922 | 50,370 | 61,491 | 111,861 | 12.6 | .... | 1,710 | 876 | 29.5 | 490 | 23.0 | 10,473 | 195 | 1,237,585 | 8,269,478 |
| 1921 | 63,559 | 36,752 | 100,311 | 13.1 | 1,390 | 1,658 | 832 | 31.7 | 493 | 24.0 | 9,542 | 184 | 1,419,843 | 9,165,392 |
| Central R. R. of N. J. 1922 | 12,354 | 15,479 | 27,833 | 6.2 | .... | 1,479 | 740 | 31.7 | 283 | 13.8 | 11,368 | 201 | 336,585 | 1,631,829 |
| 1921 | 17,671 | 8,788 | 26,459 | 15.0 | 4,253 | 1,502 | 741 | 32.5 | 267 | 13.5 | 10,427 | 171 | 336,196 | 1,625,322 |
| Chicago & Eastern Ill. 1922 | 9,075 | 6,045 | 15,120 | 19.3 | .... | 1,532 | 795 | 30.1 | 379 | 18.1 | 6,062 | 186 | 191,488 | 1,220,948 |
| 1921 | 12,406 | 4,064 | 16,470 | 15.4 | 78 | 1,567 | 794 | 31.7 | 427 | 21.6 | 6,216 | 159 | 223,481 | 1,477,383 |
| Clev., Cin., Chic. & St. L. 1922 | 9,721 | 28,173 | 37,894 | 12.2 | .... | 1,932 | 966 | 29.9 | 575 | 27.9 | 9,169 | 136 | 643,173 | 4,149,283 |
| 1921 | 14,884 | 18,677 | 33,561 | 11.1 | 376 | 1,797 | 850 | 28.2 | 555 | 30.3 | 7,807 | 131 | 715,661 | 4,363,218 |
| Elgin, Joliet & Ea.[1] 1922 | 8,741 | 5,613 | 14,354 | 16.3 | .... | 2,410 | 1,335 | 44.7 | 396 | 13.5 | 12,384 | 122 | ..... | ..... |
| 1921 | 10,311 | 3,546 | 13,857 | 8.8 | 362 | 2,337 | 1,254 | 39.7 | 303 | 11.5 | 9,208 | 129 | ..... | ..... |
| Long Island 1922 | 1,920 | 4,996 | 6,916 | 3.5 | .... | 791 | 323 | 23.3 | 78 | 5.3 | 1,372 | 291 | 197,539 | 1,161,785 |
| 1921 | 1,971 | 3,929 | 5,900 | 5.1 | 169 | 725 | 283 | 22.1 | 76 | 5.6 | 1,131 | 304 | 202,762 | 1,136,605 |
| Pennsylvania System 1922 | 148,999 | 147,840 | 296,839 | 9.8 | 1,551 | 1,767 | 919 | 33.7 | 500 | 21.5 | 13,613 | 161 | 5,125,300 | 35,975,267 |
| 1921 | 205,908 | 79,358 | 285,266 | 15.4 | 23,411 | 1,819 | 926 | 34.3 | 482 | 21.6 | 12,641 | 141 | 5,079,674 | 34,510,292 |
| Phila. & Reading 1922 | 13,400 | 20,773 | 34,173 | 4.3 | .... | 1,724 | 933 | 34.7 | 593 | 24.7 | 18,108 | 178 | 503,924 | 2,292,814 |
| 1921 | 23,583 | 13,352 | 36,935 | 5.2 | 2,668 | 1,751 | 935 | 35.7 | 471 | 20.4 | 15,550 | 169 | 492,855 | 2,337,671 |
| **Pocahontas Region:** | | | | | | | | | | | | | | |
| Chesapeake & Ohio 1922 | 30,500 | 21,546 | 52,046 | 12.8 | .... | 2,280 | 1,260 | 39.4 | 501 | 20.1 | 10,212 | 140 | 441,171 | 2,538,743 |
| 1921 | 36,264 | 13,185 | 49,449 | 11.0 | .... | 2,315 | 1,263 | 41.5 | 625 | 25.7 | 12,136 | 131 | 445,453 | 2,508,873 |
| Norfolk & Western 1922 | 24,309 | 14,238 | 38,607 | 3.9 | .... | 1,998 | 1,083 | 41.9 | 683 | 26.6 | 11,834 | 224 | 397,036 | 2,501,111 |
| 1921 | 29,955 | 6,807 | 36,762 | 9.0 | 611 | 2,139 | 1,175 | 40.9 | 822 | 32.9 | 13,594 | 175 | 412,388 | 2,663,415 |
| **Southern Region:** | | | | | | | | | | | | | | |
| Atlantic Coast Line 1922 | 11,233 | 13,906 | 25,139 | 16.7 | .... | 1,209 | 531 | 21.7 | 454 | 28.6 | 2,316 | 128 | 701,831 | 4,402,903 |
| 1921 | 20,882 | 9,369 | 30,251 | 19.3 | .... | 1,156 | 454 | 19.9 | 273 | 20.8 | 1,688 | 144 | 703,575 | 4,409,348 |
| Central of Georgia 1922 | 1,640 | 5,819 | 7,459 | 7.7 | .... | 1,066 | 504 | 23.8 | 595 | 32.2 | 2,326 | 182 | 323,009 | 1,603,678 |
| 1921 | 3,930 | 3,714 | 7,644 | 14.1 | .... | 1,114 | 502 | 21.9 | 475 | 29.1 | 1,910 | 149 | 308,462 | 1,507,993 |
| I. C. (inc. Y. & M. V.). 1922 | 24,505 | 39,886 | 64,391 | 6.0 | 1,043 | 1,765 | 834 | 29.0 | 882 | 45.8 | 9,256 | 144 | 1,497,501 | 9,021,851 |
| 1921 | 37,570 | 25,541 | 63,111 | 8.6 | 1,986 | 1,735 | 796 | 28.3 | 738 | 40.4 | 7,567 | 140 | 1,439,176 | 8,321,393 |
| Louisville & Nashville. 1922 | 21,798 | 24,359 | 46,157 | 12.0 | 41 | 1,111 | 550 | 29.7 | 579 | 28.5 | 5,319 | 179 | 1,023,588 | 5,995,597 |
| 1921 | 37,535 | 16,823 | 54,358 | 24.7 | 87 | 1,141 | 551 | 30.9 | 544 | 28.2 | 5,887 | 165 | 935,740 | 5,463,105 |
| Seaboard Air Line 1922 | 9,933 | 13,990 | 23,923 | 29.7 | .... | 1,134 | 501 | 22.5 | 336 | 20.1 | 2,269 | 179 | 488,235 | 3,112,460 |
| 1921 | 11,610 | 8,900 | 20,510 | 27.6 | .... | 1,078 | 453 | 20.6 | 307 | 20.2 | 1,782 | 191 | 557,431 | 3,214,635 |
| Southern Ry. 1922 | 24,356 | 40,117 | 64,473 | 17.6 | .... | 1,141 | 514 | 23.1 | 392 | 23.1 | 3,641 | 214 | 1,274,662 | 7,371,772 |
| 1921 | 35,848 | 24,128 | 59,976 | 11.6 | 840 | 1,156 | 490 | 21.6 | 362 | 23.8 | 3,125 | 204 | 1,285,878 | 7,614,812 |
| **Northwestern Region:** | | | | | | | | | | | | | | |
| Chic. & N. Wn. 1922 | 34,956 | 41,720 | 76,676 | 8.6 | .... | 1,321 | 556 | 23.8 | 434 | 26.4 | 3,965 | 171 | 1,384,339 | 9,519,828 |
| 1921 | 43,477 | 29,550 | 73,027 | 7.9 | .... | 1,267 | 551 | 25.2 | 435 | 27.5 | 3,794 | 170 | 1,631,238 | 10,020,373 |
| Chic., Milw. & St. P. 1922 | 39,034 | 36,941 | 75,975 | 14.4 | .... | 1,435 | 682 | 27.0 | 566 | 31.2 | 3,900 | 160 | 1,467,923 | 9,162,285 |
| 1921 | 46,333 | 29,381 | 75,714 | 17.3 | .... | 1,423 | 641 | 25.2 | 481 | 29.4 | 3,310 | 153 | 1,520,943 | 9,475,005 |
| Chic., St. P., Min. & Om. 1922 | 3,020 | 8,729 | 11,749 | 10.6 | 7 | 1,035 | 467 | 23.7 | 424 | 23.5 | 2,889 | 176 | 271,877 | 1,715,449 |
| 1921 | 3,630 | 12,104 | 15,734 | 13.4 | 212 | 1,068 | 471 | 22.6 | 344 | 20.9 | 3,135 | 169 | 303,788 | 1,759,316 |
| Great Northern 1922 | 37,337 | 11,496 | 48,833 | 7.1 | .... | 1,663 | 813 | 28.8 | 637 | 32.9 | 3,769 | 160 | 933,146 | 5,891,293 |
| 1921 | 42,066 | 11,185 | 53,251 | 10.0 | .... | 1,722 | 746 | 25.8 | 582 | 35.7 | 3,796 | 154 | 990,069 | 5,924,615 |
| Minn., St. P. & S. Ste. M. 1922 | 16,200 | 7,699 | 23,899 | 7.2 | 985 | 1,201 | 602 | 28.9 | 575 | 26.0 | 3,153 | 124 | 424,046 | 2,495,551 |
| 1921 | 20,453 | 6,110 | 26,563 | 11.0 | 2,997 | 1,224 | 587 | 23.9 | 413 | 23.1 | 2,517 | 124 | 434,308 | 2,577,928 |
| Northern Pacific 1922 | 25,846 | 9,681 | 35,527 | 12.3 | .... | 1,510 | 734 | 26.6 | 701 | 35.3 | 3,896 | 135 | 793,697 | 5,356,283 |
| 1921 | 33,287 | 9,730 | 43,017 | 14.8 | 323 | 1,644 | 741 | 25.5 | 609 | 34.6 | 4,080 | 124 | 841,446 | 5,554,885 |
| Oreg.-W. R. R. & Nav. 1922 | 4,689 | 3,179 | 7,868 | 3.2 | .... | 1,355 | 704 | 29.2 | 769 | 34.6 | 2,824 | 240 | 256,290 | 1,703,773 |
| 1921 | 7,394 | 4,256 | 11,650 | 2.6 | 243 | 1,408 | 647 | 27.2 | 482 | 26.3 | 2,610 | 227 | 255,212 | 1,728,061 |
| **Central Western Region:** | | | | | | | | | | | | | | |
| Atch., Top. & Santa Fe. 1922 | 35,809 | 28,403 | 64,212 | 5.3 | 173 | 1,604 | 586 | 20.8 | 638 | 47.1 | 4,180 | 147 | 1,665,064 | 13,487,397 |
| 1921 | 43,814 | 15,161 | 58,975 | 8.8 | 1,897 | 1,599 | 571 | 20.2 | 632 | 48.2 | 3,815 | 146 | 1,658,487 | 12,797,196 |
| Chicago & Alton 1922 | 6,150 | 7,268 | 13,418 | 9.3 | .... | 1,383 | 707 | 29.1 | 472 | 22.4 | 6,264 | 201 | 238,873 | 1,525,600 |
| 1921 | 9,061 | 6,020 | 15,081 | 4.0 | .... | 1,330 | 555 | 25.2 | 462 | 29.1 | 6,900 | 186 | 293,706 | 1,669,120 |
| Chic., Burl. & Quincy. 1922 | 34,419 | 37,294 | 71,713 | 7.5 | .... | 1,695 | 810 | 28.5 | 705 | 37.8 | 5,425 | 159 | 1,467,137 | 9,812,047 |
| 1921 | 44,523 | 26,795 | 71,318 | 10.0 | .... | 1,628 | 767 | 28.1 | 644 | 35.7 | 4,921 | 161 | 1,524,875 | 10,057,395 |
| Chic., Rock I. & Pac. 1922 | 21,492 | 22,825 | 44,317 | 14.3 | 101 | 1,220 | 566 | 23.5 | 539 | 30.1 | 3,131 | 184 | 1,264,737 | 7,351,633 |
| 1921 | 26,653 | 21,753 | 48,406 | 11.6 | 531 | 1,208 | 553 | 24.3 | 546 | 31.5 | 3,449 | 176 | 1,326,529 | 7,642,721 |
| Denver & R. G. Wn. 1922 | 10,175 | 5,653 | 15,828 | 11.0 | 14 | 1,246 | 573 | 27.0 | 389 | 21.8 | 2,372 | 245 | 229,719 | 1,672,263 |
| 1921 | 11,707 | 6,010 | 17,717 | 10.6 | 310 | 1,275 | 553 | 25.5 | 356 | 22.4 | 2,431 | 223 | 233,056 | 1,658,165 |
| Oreg. Short Line 1922 | 5,847 | 5,092 | 10,939 | 4.9 | .... | 1,341 | 609 | 27.9 | 914 | 50.0 | 4,224 | 150 | 282,368 | 2,132,146 |
| 1921 | 7,758 | 6,360 | 14,118 | 4.1 | 169 | 1,482 | 629 | 26.9 | 736 | 45.5 | 4,404 | 141 | 281,433 | 2,034,848 |
| Southern Pacific 1922 | 19,734 | 19,441 | 39,175 | 6.6 | .... | 1,632 | 707 | 23.7 | 793 | 46.0 | 4,448 | 153 | 1,360,508 | 11,306,057 |
| 1921 | 23,954 | 16,262 | 40,216 | 6.9 | 275 | 1,646 | 692 | 23.9 | 733 | 44.7 | 4,224 | 147 | 1,319,204 | 10,753,877 |
| Union Pacific 1922 | 11,695 | 14,614 | 26,309 | 4.7 | 26 | 1,523 | 620 | 22.2 | 1,259 | 82.0 | 8,934 | 166 | 870,175 | 7,438,227 |
| 1921 | 14,178 | 11,752 | 25,930 | 7.8 | 622 | 1,558 | 605 | 22.7 | 1,305 | 91.0 | 9,358 | 161 | 899,606 | 7,452,422 |
| **Southwestern Region:** | | | | | | | | | | | | | | |
| Gulf, Colo. & S. Fe. 1922 | 5,366 | 6,595 | 11,961 | 3.9 | 26 | 1,495 | 650 | 22.8 | 477 | 29.5 | 3,010 | 146 | 197,632 | 1,179,615 |
| 1921 | 8,305 | 5,128 | 13,433 | 4.2 | 428 | 1,449 | 628 | 24.3 | 388 | 24.4 | 2,754 | 137 | 195,054 | 1,180,538 |
| Mo., Kans. & Tex. 1922 | 6,948 | 9,153 | 16,101 | 8.4 | .... | 1,568 | 682 | 23.1 | 431 | 26.8 | 4,187 | 144 | 248,638 | 2,006,534 |
| 1921 | 7,869 | 6,154 | 14,023 | 7.5 | .... | 1,518 | 625 | 23.0 | 418 | 28.6 | 3,429 | 139 | 273,962 | 2,068,122 |
| Mo., Kan. & Tex. of Tex. 1922 | 339 | 11,911 | 12,250 | 7.6 | .... | 1,085 | 465 | 21.7 | 300 | 18.7 | 2,112 | 183 | 203,808 | 1,462,376 |
| 1921 | 219 | 12,311 | 12,530 | 5.1 | .... | 1,177 | 474 | 22.3 | 297 | 20.8 | 2,140 | 162 | 275,064 | 1,776,187 |
| Missouri Pacific 1922 | 19,965 | 31,394 | 51,359 | 9.6 | .... | 1,330 | 626 | 25.5 | 409 | 21.9 | 2,956 | 169 | 820,431 | 5,095,265 |
| 1921 | 28,797 | 24,440 | 53,237 | 8.2 | 176 | 1,391 | 634 | 25.7 | 483 | 27.4 | 3,540 | 158 | 927,521 | 5,657,228 |
| St. Louis-San Francisco. 1922 | 14,699 | 23,422 | 38,121 | 7.0 | .... | 964 | 434 | 24.4 | 270 | 15.8 | 2,198 | 220 | 661,130 | 3,815,004 |
| 1921 | 18,690 | 13,402 | 32,092 | 6.9 | .... | 1,063 | 475 | 24.6 | 402 | 23.9 | 2,754 | 190 | 778,370 | 4,482,149 |
| Southern Pacific Lines[1] 1922 | 5,441 | 16,343 | 21,784 | 6.2 | .... | 1,234 | 547 | 24.1 | 501 | 30.0 | 2,939 | 134 | 547,810 | 3,614,274 |
| (in Texas and La.) 1921 | 8,329 | 16,926 | 25,255 | 16.3 | 1,020 | 1,250 | 546 | 26.8 | 402 | 32.2 | 2,781 | 131 | 538,933 | 3,506,395 |
| Texas & Pacific 1922 | 3,965 | 10,261 | 14,226 | 14.5 | .... | 1,325 | 557 | 21.5 | 317 | 20.3 | 2,307 | 176 | 284,155 | 1,857 132 |
| 1921 | 5,032 | 6,890 | 11,922 | 20.5 | .... | 1,246 | 495 | 21.1 | 380 | 26.7 | 2,319 | 150 | 301,314 | 1,994,243 |

[1]Includes Galveston, Harrisburg & San Antonio, Houston & Shreveport, Houston & Texas Central, Houston East & West Texas, Iberia & Vermilion, Lake Charles & Northern, Louisiana Western, Morgan's La. & Tex. R. R. & S. S. Co., and Texas & New Orleans.

## $10,000,000 D. & R. G. W. Issue Authorized

The United States District Court has authorized the Denver & Rio Grande Western to issue $5,000,000 of receiver certificates to run for two years at six per cent and $5,000,000 of equipment trust notes to run for 15 years and to bear not to exceed 6½ per cent interest. Of the $10,000,000, $6,000,000 will be spent for equipment which will include 10 Mountain type locomotives, 10 heavy Mallet locomotives, 5 narrow-gage Mallet locomotives, a 150-ton wrecking derrick, a 175-ton narrow gage wrecking derrick, a narrow gage rotary snow plow, 500 stock cars, 100 narrow gage stock cars, 350 coal cars and miscellaneous equipment. The remainder of the $10,000,000 authorized in certificates and notes will be expended in improving the various lines. These improvements include new rail, ballasting, lengthening side tracks, yard improvements, water stations and additions to shop facilities, principally at the Burnham and Salt Lake terminals.

## Revenues and Expenses for October

The Interstate Commerce Commission's summary of railway revenues and expenses for October and 10 months of 1922 (193 Class I roads) is as follows:

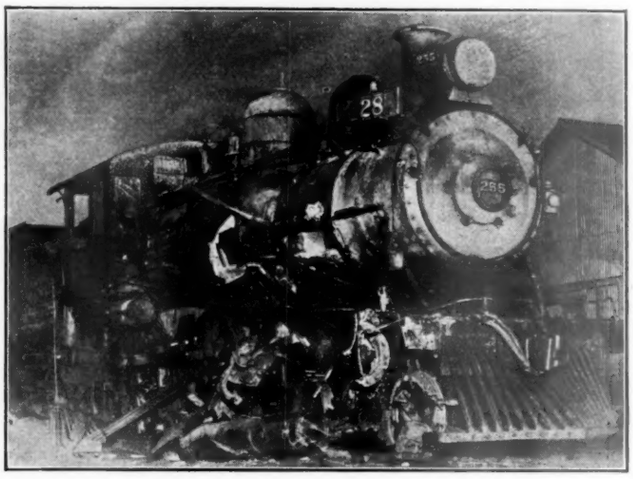
| Item | October | | Ten Months[1] | |
|---|---|---|---|---|
| | 1922 | 1921 | 1922 | 1921 |
| Average number of miles operated | 235,192.62 | 235,150.38 | 235,368.31 | 235,011.30 |
| Revenues: | | | | |
| Freight | $406,105,599 | $401,951,413 | $3,253,395,823 | $3,296,896,869 |
| Passenger | [2] 90,133,399 | [3] 88,903,056 | [4] 892,789,742 | [5] 982,697,055 |
| Mail | 7,515,998 | 7,359,842 | 74,076,744 | 78,625,027 |
| Express | 18,755,980 | 12,178,757 | 112,784,602 | 82,728,318 |
| All other transportation | 16,240,598 | 15,917,948 | 146,641,440 | 136,856,033 |
| Incidental | 10,634,632 | 9,994,617 | 94,470,631 | 99,219,683 |
| Joint facility—Cr. | 886,838 | 595,615 | 8,297,277 | 6,357,028 |
| Joint facility—Dr. | 221,148 | 179,594 | 1,802,860 | 1,435,732 |
| Railway operating revenues | 550,051,896 | 536,722,654 | 4,580,653,399 | 4,681,944,281 |
| Expenses: | | | | |
| Maintenance of way and structures | 68,957,275 | 72,661,765 | 617,111,915 | 653,201,561 |
| Maintenance of equipment | 130,408,463 | 112,191,535 | 1,024,418,667 | 1,058,558,504 |
| Traffic | 7,245,129 | 6,904,722 | 71,817,484 | 70,588,922 |
| Transportation | 205,891,873 | 189,465,425 | 1,767,289,149 | 1,924,445,014 |
| Miscellaneous operations | 4,174,925 | 3,936,269 | 39,806,196 | 41,509,392 |
| General | 13,044,812 | 13,285,351 | 130,299,242 | 140,906,559 |
| Transportation for investment—Cr. | 750,212 | 486,272 | 5,479,136 | 4,910,596 |
| Railway operating expenses | 428,972,265 | 397,958,795 | 3,645,263,517 | 3,884,269,356 |
| Net revenue from railway operations | 121,079,631 | 138,763,859 | 935,389,882 | 797,674,925 |
| Railway tax accruals | 27,014,299 | 25,825,334 | 254,935,753 | 235,416,521 |
| Uncollectible railway revenues | 42,014 | 175,652 | 1,065,847 | 1,059,469 |
| Railway operating income | 94,023,318 | 112,762,873 | 679,388,282 | 561,198,935 |
| Equipment rents—Dr. balance | 6,835,917 | 5,762,476 | 49,488,689 | 45,546,289 |
| Joint facility rent—Dr. balance | 1,932,435 | 1,479,621 | 15,582,324 | 16,238,890 |
| Net railway operating income | 85,254,966 | 105,520,776 | 614,317,269 | 499,413,756 |
| Ratio of expenses to revenues (per cent) | 77.99 | 74.15 | 79.58 | 82.96 |

[1] Does not include Boston & Albany, the revenues and expenses of which are included in New York Central report.
[2] Includes $2,880,164, sleeping and parlor car surcharge.
[3] Includes $2,658,395, sleeping and parlor car surcharge.
[4] Includes $27,232,711, sleeping and parlor car surcharge.
[5] Includes $27,362,471, sleeping and parlor car surcharge.

## The Disaster at Humble, Tex.

The number killed or fatally scalded in the collision on the Southern Pacific at Humble, Tex., reported in our last issue, was 21; and some of the 14 injured were at last accounts in a critical condition. The killed were nearly all in the negro car, and steam from the damaged switching engine, rushing in through an open window, caused all or nearly all the deaths. All other windows of the coach were closed. It was believed that if some or all the rest had been open, the scalding would have been less severe. The collision occurred about 10 p. m. The switching locomotive, which got in the way of the passenger train (Train 28, Engine 255) had been laid up for the night, in charge of a watchman. This watchman had to supply the locomotive with water and with fuel oil: and to do this it appears that he moved it; but he is held to have moved it from one track to another when he should not have done so; and in this movement, in some way not explained, he moved it afoul of the main track.

Of the killed or fatally injured, four were white passengers and 14 were negro passengers; to which are to be added the conductor, the news agent and a porter.




*International*

**Engine No. 255 After the Collision**

The man who was in charge of the yard engine, J. H. Smith, is about 60 years old. The reports indicate that he was in such a nervous condition that his narrative was not wholly intelligible; but one account, based on statements made by Smith, says that the locomotive started unattended toward the main track, while Smith was in his shanty; and that he jumped to the engine and tried to reverse it in season to prevent fouling of the main track. The passenger train was approaching at moderate speed but there was a dense fog so that the engineman could not see far ahead.

## "Railway Engineering and Maintenance"

Effective January 1, 1923, the name of the Railway Maintenance Engineer will be changed to Railway Engineering and Maintenance. At the same time, the number of editorial pages will be increased to permit the inclusion of more information relative to the design, construction and maintenance of railway bridge, building and water service facilities.

Since the establishment of the Maintenance of Way section in the *Railway Age* in 1911 and its development into the Railway Maintenance Engineer in 1916, there has developed a closer contact between engineering and maintenance, until today they are merged on many railroads. This increasingly intimate relationship has been apparent in the Roadmasters' Association, the Bridge and Building Association and the American Railway Engineering Association. It has also been reflected in the editorial contents of the Railway Maintenance Engineer and its circle of readers, until today this paper is read by nearly every railway officer of technical or practical training in charge of the construction and maintenance of roadway and structures. The new name has been adopted in order to indicate more accurately the nature of the editorial contents and the character of the readers of this publication.

The additional attention which will be given to bridge, building and water service problems is a recognition of the increasing importance of these phases of railway construction and maintenance. By increasing the number of editorial pages these developments will be treated more adequately without detracting in any way from the space now devoted to the problems of track construction and maintenance, or eliminating any other features now appearing in the publication.

## Electrification—Installation and Operating Costs

Steam Road Electrification was the title of an address presented by A. H. Armstrong, chairman electrification committee, General Electric Company before the New York Electrical Society on Tuesday, December 19 at the Engineering Societies' Building in New York. Mr. Armstrong stated that the saving in coal effected by electric operation should offset the additional cost of the electrical equipment. Electrical operating facilities exclusive of locomotives, he stated, cost just about as much as the electric locomotives themselves, while steam locomotive operating facilities, not required when a road is electrified, cost about one-half as much as the locomotives. Electrification, he said, in a given case, should save about 20 per cent in operating costs as compared with steam, 12 per cent of which was effected by reduced maintenance costs.

Mr. Armstrong also elaborated upon the better known advantages of electric operation such as increased track capacity, improved terminal facilities, improved operation, etc. He also pointed out the fact that the great majority of steam road terminals were of a necessity on the outskirts of cities and he stated that electrified terminals centrally located would minimize truck competition.

## Short Line Association Establishes Purchasing Agency at Chicago

The Consolidated Purchasing Agency of the American Short Line Railroad Association, which was organized in June, 1921, with James W. Caiin as manager of purchases, was removed from Washington to Chicago, on December 1, 1922, and is now located in the Railway Exchange Building. This change was necessitated by the increased volume of business being handled by this department of the association, which can best be taken care of from a more central point. There was also need of being located in an industrial and railroad center to facilitate procuring materials and equipment more promptly. Chicago was chosen in order that the agency might be able to keep in constant contact with manufacturers and secure the best class of used cars and locomotives direct from the trunk lines.

The membership of the American Short Line Railroad Association consists of slightly less than 500 different railroads, which in combination represent over 25,000 miles of main line tracks and an investment of over $1,000,000,000. These roads vary from small logging lines a few miles in length up to interstate carriers of several hundred miles, and include Class 2 and Class 3 roads.

While the consolidated purchasing agency assumes no financial responsibility, being unincorporated and without working capital, it acts as an agency for combining the purchases of these different railroad companies and for negotiating prices on a volume basis instead of the retail basis on which the individual small railroad has heretofore purchased its supplies. There has been no attempt to cover all purchases, but instead the agency has proceeded conservatively and confined its efforts during the first year to those materials which were either standard or susceptible of standardization. For example, purchases of rails have been made in 500-ton lots and distributed to member lines in less than 500-ton shipments, which gave them the same advantage as the purchaser of 500 tons and over. Likewise, spikes and bolts are purchased in carload lots, and even though a small road may need only 25 kegs it derives the benefit of the carload price. Besides purchasing, the agency aids in the sale of materials which the short lines do not need and arranges the exchange of equipment among the roads. To expedite the work of the agency a department of new equipment and materials, one of second hand equipment and one of industrial development was formed.

During its existence the agency has proved its value to the short lines, not only in purchasing and exchanging, but in the selection of equipment best suited to the most efficient operation of these lines. As a result the scope of the organization has reached such proportions that it is necessary to develop a more extensive organization. Accordingly plans are being considered wherein three regional offices will be opened during the next year, one in the East, one in the South and one on the Pacific coast, which will facilitate the distribution of materials shipped in carload lots and reconsigned.

After an investigation covering the greater part of a year, augmented by answers to questionnaires sent to all member lines throughout the United States and Canada, the consolidated purchasing agency made recommendations and placed orders for over a quarter of a million dollars' worth of gasoline railway motor car equipment, representing some 20 cars, which are showing excellent results on the different lines and which are replacing steam passenger trains.

Through the activities of the manager of purchases, a finance corporation is now being organized under direction of the association, whereby member lines and others may acquire motor car equipment under a lease purchase plan, making it possible for the equipment to pay for itself through the saving effected. This corporation will be ready to function by the first of the year, at which time formal announcement will be made.

Work is also progressing satisfactorily in the direction of arranging for standard designs of cars and locomotives, whereby substantial economies may be effected. It will also be possible by using standard designs to arrange financing on a basis that could not be done where a variety of different designs were contemplated. Through the consolidation of the requirements of these lines, the quantity will be sufficient to justify liberal prices and terms.

Just as fast as these different problems are worked out, others will be taken up, such as combining the fuel requirements in different districts, grouping the insurance, and possibly evolving policies giving more complete coverage than heretofore; conversion of coal burning equipment to oil, where the combined locomotives are sufficient to justify lower prices and enable financing of the equipment; and other such innovations which make for economy.

## Central Pacific Hearing Concluded

The hearing before Commissioners Meyer and Potter of the Interstate Commerce Commission on the Southern Pacific's application for authority to retain the Central Pacific was concluded on December 14 with the testimony of Harold K. Faye, traffic manager of the Western Pacific, who asked that if the Southern Pacific is authorized to acquire the Central Pacific, care should be taken to insure that the Western Pacific will be entitled to the same treatment by the Southern Pacific so far as joint through rates on both transcontinental and local traffic are concerned, as is accorded the Central Pacific. He took no position for or against the Southern Pacific's application, but pointed out the handicaps under which the Western Pacific and its shippers now work because the Southern Pacific does not participate with it in the making of through rates. There are practically no through rates locally in California between points on the Southern Pacific and on the Western Pacific, he said, and the combination of locals restricts largely the ability of producers and manufacturers located on the Western Pacific to ship to and from points off that line in competition with those located on the Southern Pacific. Also there are similar restrictions as to the application of through transcontinental rates. Asked what would be the effect on interchange between the Union Pacific and Western Pacific at Salt Lake City if the Union Pacific should acquire the Central Pacific, Mr. Faye said he did not know; but he said it would be much against the public interest for the Union Pacific to close that gateway, and he doubted if it would do it. In reply to questions by Commissioner Potter he said that from the standpoint of competition his experience with the local California situation would indicate that the competition offered to the public if the Central Pacific were controlled by the Southern Pacific would not be materially different from that which would be offered if the Central Pacific were independent and he could not conceive of the competition between the Central Pacific and the Western Pacific being any stronger than it is now.

The last witness for the Union Pacific was H. M. Bischoff, general agent of the Chicago & North Western at Chicago, who testified that there was no co-operation between the Southern Pacific and North Western soliciting agents at Chicago in soliciting prospective business for the Ogden route. He said he did not know the Southern Pacific general agent at Chicago and the Southern Pacific was regarded as a competitor because of its interest in the southern route. He was cross-examined by F. H. Wood, commerce counsel for the Southern Pacific, to show that the Southern Pacific might work with other lines out of Chicago for business to be routed over the Union Pacific and the Ogden route.

# Traffic News

The Traffic Club of New England, at its meeting in Boston on December 13, elected as president of the club, Charles B. Baldwin of the United Shoe Machinery Corporation, in place of Gerrit Fort. Mr. Baldwin is regional vice-president of the National Industrial Traffic League.

The Baltimore & Ohio now accepts shipments of milk collect using a "collect milk-cream waybill," supplanting the former rule requiring prepayment. By a new system of invoice billing for the return of empty cans a complete record is kept showing the exact time when delivered to the railroad.

A committee of 21 to study problems of the farmer, including marketing and transportation, was authorized by the Wisconsin Manufacturers' Association, at Milwaukee, Wis., on December 14. President Carl A. Johnson will appoint five representatives of agriculture, five dairymen, five bankers and five manufacturers and will himself be chairman of the committee.

The Bureau of Service, National Parks & Resorts, maintained by the Chicago & North Western-Union Pacific system, offers for sale for use as a Christmas present, a prepaid certificate covering railroad fare and all expenses, including hotel accommodations and motor trips, for a 27-day tour to Southern California. The tour may begin leaving Chicago on the Los Angeles Limited either January 6 or 27 or February 17.

## Bituminous Coal Production

Production of soft coal continues at a daily rate of approximately 1,900,000 tons. The output for the week ended December 9 is estimated at 11,389,000 tons, including lignite, coal coked, mine fuel, and local sales, according to the weekly bulletin of the Geological Survey. Preliminary reports of cars loaded the first four days of last week indicated a small decline on account of lay-off in some union districts on Tuesday, miners' election day. The estimated cumulative production of bituminous coal this year to December 9, inclusive, stands at 376,826,000 tons, or 2 per cent less than in the corresponding period of 1921.

## Anthracite Shipments for November

Shipments of anthracite for the month of November, as reported to the Anthracite Bureau of Information, Philadelphia, amounted to 6,420,102 gross tons, as compared with 5,314,014 tons during the corresponding month last year—an increase of 1,106,088 tons. November of this year showed a slight decrease from October, but average shipments for the days the mines were in operation exceeded those of October.

Shipments by originating carriers were as follows:

| | November, 1922 | November, 1921 | October, 1922 |
|---|---|---|---|
| P. & R. | 1,224,990 | 1,017,409 | 1,266,092 |
| L. V. | 1,109,449 | 913,737 | 1,166,195 |
| C. of N. J. | 583,835 | 512,613 | 617,668 |
| D. L. & W. | 896,182 | 814,131 | 936,375 |
| D. & H. | 876,861 | 756,598 | 828,216 |
| Penna. | 546,214 | 429,638 | 579,306 |
| Erie | 706,747 | 503,488 | 701,270 |
| N. Y., O. & W. | 161,660 | 136,945 | 179,865 |
| L. & N. E. | 314,164 | 229,455 | 292,941 |
| Total | 6,420,102 | 5,314,014 | 6,567,928 |

## Post Office Department Finds Many Late Trains

Elaborate plans made by the Postoffice Department for the use of freight cars for parcel post holiday business are being frustrated, according to a statement issued by the Postoffice Department Information Service, through "delays in the arrival of trains and the failure of the railroads to furnish readily the necessary cars at the desired points. Late trains are resulting in the loss of the utilization of hundreds of cars for many hours."

"A freeze-up at any of the larger terminal freight yards or a bad snow would make matters even worse," the statement continued. "Already many complaints of delay in daily delivery of the regular mails are being received. Many trains are arriving at destination from three to eight hours late. Important connections are failing and causing delays all along the line. The trouble is not confined to any particular road or locality but has become quite general.

"One important mail train from New York missed connection eight times within a month, delaying the delivery of mails in certain industrial centers as much as 24 hours."

## Freight Commodity Statistics

The Bureau of Statistics of the Interstate Commerce Commission has issued a statement showing by districts the freight tonnage transported by Class I railways for the quarter ended September 30, 1922. Below will be found a comparison, by general classes of commodities, of the tonnage transported in 1921 with that transported in 1922:

| Class of commodities | Quarter ended Sept. 30, 1921 | Quarter ended Sept. 30, 1922 | Per cent of increase, 1922 over 1921 |
|---|---|---|---|
| | Number of tons originated | | |
| Products of agriculture | 31,920,709 | 28,135,979 | *11.86 |
| Animals and products | 5,919,002 | 6,473,191 | 9.36 |
| Products of mines | 139,807,662 | 138,830,954 | *.70 |
| Products of forests | 17,312,655 | 22,539,851 | 30.19 |
| Manufactures and miscellaneous | 46,208,214 | 61,955,035 | 34.08 |
| Merchandise—All L. C. L. traffic | 11,133,525 | 11,020,382 | *1.02 |
| Total | 252,301,767 | 268,955,383 | 6.60 |
| | Total tons carried | | |
| Products of agriculture | 59,612,632 | 52,584,337 | *11.79 |
| Animals and products | 10,378,917 | 11,015,159 | 6.13 |
| Products of mines | 233,031,729 | 227,565,940 | *2.35 |
| Products of forests | 33,845,769 | 42,429,882 | 25.36 |
| Manufactures and miscellaneous | 87,585,753 | 116,425,428 | 32.93 |
| Merchandise—All L. C. L. traffic | 17,425,904 | 17,879,418 | 2.60 |
| Total | 441,880,704 | 467,900,164 | 5.89 |

*Decrease.

For the nine months ended September 30 the number of tons carried this year was 1,295,628,322, an increase of 4.2 per cent as compared with last year.

## No Congestion of Christmas Mail

Daily telegraphic reports received by the Post Office Department on December 20 from the 15 railway mail service divisions revealed no congestion of the Christmas mails at any point in the United States, according to a statement issued by the department's Information Service.

A marked improvement in the operation of trains was also a feature of the dispatches. Several of the divisions reported heavy increases in the holiday mails over last year, Atlanta showing an estimated gain of 50 per cent and San Francisco 30 per cent. At Omaha the Union Pacific was compelled to run a special mail train of 13 refrigerator cars loaded solidly with mail for Western points making a total of 19 as compared with 15 cars hauled in a single day over the same line last year. A summary of these telegrams received by the department today from its railway mail divisions follow:

ATLANTA: Heavy holiday mails. Fifty per cent increase over same period last year. Mails moving promptly.

BOSTON: Mails moving freely. Indications are early mailing campaign successful and may not have as pronounced peak as in former years.

NEW YORK: No congestion in terminals in and around New York city nor at Albany, Binghamton, Buffalo, Philadelphia and Harrisburg. Weather conditions so far favorable to prompt distribution and dispatch of mails.

WASHINGTON, D. C.: No unusual amount of unworked mail. Number of storage cars dispatched today was 71 as compared with 50 last year.

CINCINNATI: No congestion and no unworked mail. Many trains running late.

CHICAGO: Conditions favorable. No congestion or unworked mail. Empty equipment situation much improved.

ST. LOUIS: Trains running badly but no congestion nor unworked mail.

KANSAS CITY, MO.: Conditions satisfactory throughout division. No congestion. Mails heavy. Weather fine.

SAN FRANCISCO: No unworked mail. No congestion on lines nor terminals. Mails moving early to Eastern points. Estimated increase over last year over thirty per cent.

CLEVELAND: No congestion. Unworked mails normal. Terminals in good condition. Indications are for very heavy run of mail tonight and tomorrow.

ST. PAUL: Condition throughout division satisfactory. No unusual reports of unworked mail and no congestion. Storage mails continue heavy and trains experiencing difficulty in maintaining schedules on account of excessively cold weather.

FORT WORTH: No congestion of mails in district.

NEW ORLEANS: No congestion.

SEATTLE: Conditions are good. No congestion at any point in district Trans-continental trains running from two to ten hours late.

OMAHA: All terminal lines and platforms clear. Trains running much better. On account of car shortage Union Pacific running second section of Train Three as mail special with 13 refrigerator cars loaded solid with mail for Ogden and points west making total 19 storage cars as against 15 last year.

PITTSBURGH: Operation of trains better today. No congestion of mails. No unworked mail.

# Commission and Court News

## State Commissions

The order of the Alabama Public Service Commission requiring passenger fares in that state to be reduced on December 15 to three cents a mile was suspended on December 11 by a temporary injunction procured by the railroads from the United States District Court.

## Personnel of Commissions

### I. C. C. Members Reappointed

President Harding on December 20 sent to the Senate the nominations of C. C. McChord and Joseph B. Eastman for reappointment as members of the Interstate Commerce Commission. Their terms expire at the end of the year. Mr. McChord, who is now chairman, has been a member of the commission since 1910 and Mr. Eastman has been a member since 1919.

## Court News

### Trailer Car Not An Appurtenance Within Boiler Inspection Act

The Mississippi Supreme Court holds that a trail car constructed and equipped like an ordinary flat car, but used exclusively in pushing cars onto a transfer boat to prevent the great weight of the locomotive from being placed on the apron of the boat, is not an "appurtenance" of the locomotive and tender within the meaning of the Boiler Inspection Act. The action was for injuries sustained by being thrown from a defective footboard on the trailer.—A. W. (Miss.) 62 So. 161.

### Not Liable for Explosion of Powder Left in Car by Consignee

The Utah Supreme Court holds that railroad cars used in the ordinary course of business do not come within the class of instrumentalities that may be designated as attractive nuisances. A railroad company was therefore held not liable for injuries to a boy from the explosion of powder which he found in a car where it had been left by the consignee, who unloaded the car a short time before the accident, the railroad company having no knowledge that the powder was in the car. The company had the right to assume that the consignee had removed all the powder. The car was not in a public place where children or others had a right to pass.—Bogdon v. Los Angeles & Salt Lake (Utah), 205 Pac. 571.

## United States Supreme Court

### Indiana Statute Requiring Settlement of Damage Claims in 90 Days Held Valid

An Indiana statute of 1911 provides for the presentation of claims for loss or damage to freight transported wholly within the state within four months and for payment or rejection by the railroad within 90 days therefrom, failing which the claim shall stand admitted as a liability. The Supreme Court of the United States holds that the statute is not unconstitutional as in violation of the due process clause of the Fourteenth Amendment. The court holds untenable the contention that by the statute, in case of suit by a claimant, he is excused from establishing his claim. "If the claim is just, there is no injustice in requiring its payment; if the claim is deemed by the company to be unjust, the statute requires a declaration of the fact by its rejection. Upon rejection, suit, of course, must be brought for it and it must be established. No penalty is imposed for its rejection nor increase of its amount in consequence of rejection."—Southern Ry. Co. v. Clift. Opinion by Mr. Justice McKenna. Decided December 4, 1922.

# Foreign Railway News

### Ireland Considers Consolidation of Railways

Plans are being made in the Irish Free State to consolidate all the railways into one or two systems, according to press dispatches from Dublin. A bill to that effect will, it is said, be introduced shortly in the Irish parliament.

### British Railways in Conference With Unions

Conferences between representatives of the managements of the British railways and the National Union of Railwaymen and the Associated Society of Locomotive Engineers and Firemen are in progress looking toward a modification of certain phases of the national agreements with these unions. In the event that the conferees fail to reach an agreement, it is likely that the question will be submitted to the National Wages Board for adjudication.

### Another Electrification Combine in Britain

An agreement is rumored, according to The Engineer (London), between Sir W. G. Armstrong-Whitworth & Company, locomotive builders, and the British Thompson-Houston Company, electrical manufacturers, whereby the former will undertake to build electric locomotives and rolling stock and the latter electrical equipment, power stations, etc. for railway electrification. Two other strong groups similarly organized already exist in England, viz. the Vickers group and the Poiver & Transport Finance Company, which is backed by the North British Locomotive Company and the English Electric Company.

### Peru Ratifies Dansmuir Concession

The Peruvian chamber of deputies has ratified the Dunsmuir railway concession with certain reservations, according to dispatches to the Wall Street Journal. After approval by the Peruvian senate the company will have six months in which to place a bond issue for 1,245,000 Peruvian pounds sterling ($5,278,000 at present exchange rates). The proceeds will go to Peruvian government and the concessionaires will receive a monopoly on tobacco which is expected to yield sufficient profit to provide for railway construction.

Nine lines of railway will be built and operated by the concessionaire on his own account. At the end of a period of 45 years these lines revert to the government unless the concessionaire desires to purchase them at cost price. The tobacco monopoly reverts to the government after 33 years. It yields a profit of some $2,500,000 per annum.

The concessionaire, moreover, is to receive as an outright gift of government lands 15½ miles on each side of the railway, in lots of 12,356 acres each, the government retaining and the company receiving alternate lots. Construction must proceed at a minimum rate of 93 miles a year.

### French-Built Electric Locomotive Undergoes Test

A trial run of a French built electric locomotive was recently conducted by the French Ministry of Public Works. This locomotive is the first of a series of 50 which are to be built on a standardized design for railroad service between Dax and Toulouse, a distance of 220 miles. They will be constructed by the Société des Construction Mecaniques which recently established works at Tarbes where 900 men are now employed.

It is expected that the section of the Midi Railway between Dax and Toulouse will be completely electrified during 1923. Progressively the whole of the Midi, P. L. M. and Orleans systems representing a total of about 5,750 miles of line, will be similarly transformed. This scheme for the electrification of the railways is being carried out in conjunction with the undertaking for the utilization of the rivers Rhone and Dordogne for the development of electric power, generally. The substitution of electricity for steam as a motive power on the railroads will enable France, according to official estimates, to reduce her imports of coal by about 3,000,000 tons a year.

# Equipment and Supplies

## Locomotives

THE DENVER & RIO GRANDE WESTERN has ordered one narrow gage rotary snow plow from the American Locomotive Company.

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 10 switching locomotives, 10 Mikado type and 8 Pacific type locomotives.

THE SNOQUALMIE FALLS LUMBER COMPANY, Snoqualmie Falls, Wash., has ordered one Prairie type locomotive from the Baldwin Locomotive Works.

THE LEHIGH VALLEY, reported in the *Railway Age* of November 18 as inquiring for 30 locomotive tenders, has ordered this equipment from the American Locomotive Company.

THE MESABA CLIFFS IRON MINING CO., Ishpeming, Mich., has ordered three 6-wheel switching locomotives from the American Locomotive Company. These locomotives are for 19 by 26 in. cylinders.

THE CHICAGO, BURLINGTON & QUINCY, reported in the *Railway Age of* November 18 as inquiring for 50 Mikado type and 10 Santa Fe type locomotives, has ordered this equipment from the Baldwin Locomotive Works.

## Freight Cars

THE TENNESSEE CENTRAL is inquiring for 1,000 composite gondola cars.

THE BALTIMORE & OHIO is asking for bids for the repair of 2,000 box cars.

THE AMERICAN TURPENTINE & TAR CO., New Orleans, La., is inquiring for one tank car.

THE TEXAS-LOUISIANA PRODUCING & CARBON CO., Monroe, La., is inquiring for three insulated tank cars of 8,000 gal. capacity.

THE DENVER & RIO GRANDE WESTERN is inquiring for 500 stock cars of 40 tons' capacity, 100 narrow gage stock cars and 350 coal cars.

THE MUSCLE SHOALS, BIRMINGHAM & PENSACOLA, reported in the *Railway Age* of December 16 as inquiring for 50 box cars and 50 flat cars, is also inquiring for 50 hopper cars and 50 gondola cars of 50 tons' capacity.

THE CHICAGO & NORTH WESTERN is inquiring for 3,000 single sheath box cars of 80,000 lb. capacity with steel underframes and upper frames and 200 steel underframe milk cars with standard refrigerator car type bodies and four wheel passenger type trucks.

THE UNION PACIFIC, reported in the *Railway Age* of December 9 as asking for bids on 5,000 refrigerator cars, has ordered 1,000 from the Pullman Company, 1,000 from the General American Car Company, 1,030 from the Pacific Car & Foundry Company, 1,500 from the Standard Steel Car Company, and 500 from the Mt. Vernon Car Company.

## Passenger Cars

THE PERE MARQUETTE has ordered two dining cars from the Pullman Company.

THE CENTRAL OF NEW JERSEY is inquiring for three, 70 ft. combination mail and express cars.

THE MISSOURI PACIFIC is inquiring for 13 suburban coaches and 4 combination passenger and baggage cars, 63 feet long.

THE PHILADELPHIA & READING, reported in the *Railway Age* of December 2 as inquiring for 45 steel suburban passenger coaches and 5 steel suburban combination passenger and baggage cars, has ordered this equipment from the Bethlehem Shipbuilding Corporation, Harlan Plant.

THE NEW YORK CENTRAL, reported in the *Railway Age* of December 16 as having placed orders for 60 cars for passenger service, has purchased 125 additional cars as follows: 20 multiple unit steel passenger motor cars, 20 coaches and 10 baggage cars from the Standard Steel Car Company; 30 baggage cars and 20 coaches from the American Car & Foundry Co.; 15 combination passenger and baggage cars and 10 coaches from the Pressed Steel Car Company.

## Iron and Steel

THE PENNSYLVANIA RAILROAD has ordered 500 tons of steel for bridges from the Fort Pitt Bridge Co.

THE MISSOURI PACIFIC has ordered 700 tons of structural steel from the Virginia Bridge & Iron Company.

THE FT. DODGE, DES MOINES & SOUTHERN has ordered 238 tons of structural steel from the American Bridge Company.

THE BOSTON & MAINE is inquiring for some structural steel for use on locomotive shops now building at Concord, N. H.

THE CHESAPEAKE & OHIO, reported in the *Railway Age* of November 25 as inquiring for 500 tons of steel for bridges, has ordered 400 tons from the Phoenix Bridge Company.

## Machinery and Tools

THE DELAWARE, LACKAWANNA & WESTERN expects to buy shortly a total of about 27 machine tools including engine lathes and a number of miscellaneous tools for its shops at East Buffalo, N. Y. and at Gravel Place, Pa, also for its locomotive shops at Kingsland, N. J.

## Miscellaneous

THE GREAT NORTHERN is inquiring for 2 all steel air operated spreaders equipped with ballast spreading and ditching attachments.

THE KANSAS CITY SOUTHERN has awarded a contract to the Truscon Steel Company, Chicago, for the sash to be used in the reconstruction of its shops at Pittsburg, Kan.

MISSOURI PACIFIC.—This company has closed bids for the installation of sprinkler systems for fire protection at its shops at St. Louis, Mo.; Nevada, Crane and Poplar Bluff.

THE NEW YORK CENTRAL has asked for bids for two inclined freight elevators for Pier D, North river, foot of Sixtieth street, New York City, also for fence wire, posts and parts for installing same.

THE CANADIAN PACIFIC has ordered a new passenger steamship for use between Canada and Australia, to be completed in 20 months. The vessel will be of 20,000 tons gross register, 600 ft. long and 72 ft. beam, four screws turned by Diesel engines.

THE MISSOURI PACIFIC has awarded a contract to the Railroad Water and Coal Handling Company, Chicago, for the underground work connected with the installation of sprinkler systems for fire protection in its shops at St. Louis, Mo., Nevada, Crane and Poplar Bluff.

THE NEW YORK CENTRAL is asking for bids until 12 o'clock noon, December 28, for its requirements until April 1, 1923, on the line Buffalo and East, of fuel oil (paraffine base), gasoline, long time burning semaphore oil, turpentine, substitute, coach candles, mineral seal oil, common black oil, West Virginia black oil and gas oil.

J. W. GREEN, a former member of the Brotherhood of Locomotive Engineers, has sued the Brotherhood for $50,000 damages in connection with his expulsion from the Brotherhood for alleged disloyal remarks; and in court at Selma, Ala., on December 13, a jury is said to have given him a verdict for $40,000.

# Supply Trade News

**E. F. Pride,** secretary and assistant treasurer of the **Standard Coupler Company,** New York, has been elected treasurer and **C. T. Lynch** has been elected secretary.

**A. P. Dennis,** who has been officially connected with the Standard Coupler Company, New York, since its organization, has resigned as vice-president and treasurer.

**The Railroad Supply Company,** Chicago, has arranged with the Valley Electric Company to take charge of exclusive railroad sales of Valley rectifiers used in signal service.

**The Ingersoll Rand Company** and the **A. S. Cameron Steam Pump Works,** New York, have opened a branch office at 718 Ellicott Square building, Buffalo, N. Y. This new office is equipped to render full service to those interested in the numerous products manufactured by these companies.

**Peter A. Frasse & Company, Inc.,** New York City, has been appointed exclusive eastern distributor for the electric carbon, alloy and tool steels, in bars, billets and die blocks manufactured by the Sizer Steel Corporation with plants at Buffalo, N. Y., and Solvay, N. Y. (Syracuse), combined with the equipment of the Frasse Steel Works, Inc., Hartford, Conn., for cold finishing and heat treating. The Frasse Steel Works, has been appointed the exclusive New England distributor for the Sizer Steel Corporation.

**Herbert Hall Hewitt,** president of the Hewitt Rubber Company, Buffalo, N. Y.; the Magnus Company, Inc., New York.; the Reading Car Wheel Company, Reading, Pa., and the St. Thomas Brass Company, St. Thomas, Ont., died at his home in Buffalo on December 19. Mr. Hewitt had been in poor health for two years. He was born on January 19, 1855, at Detroit, Mich., and entered the employ of the Pullman Company when he was about 20 years old and later became manager of that company. He subsequently went to Buffalo where he established the Buffalo Brass Company and the Union Car Works. The latter company later became the Buffalo Car Works of the American Car & Foundry Company. Mr. Hewitt was the inventor of several railroad appliances. He had served as president of the Magnus Company since its organization in 1899 and was formerly a director of the Seaboard National Bank and the Mechanics and Metals National Bank of New York City and at the time of his death was a director of the Marine Trust Company, Buffalo.

**Major Frank S. Robbins,** who recently returned from the Orient after serving as a mechanical adviser for the Inter-Allied Technical Board at Harbin, Manchuria, has joined the forces of the **Pittsburgh Testing Laboratory** at Pittsburgh, Pa., having been appointed railway representative of this organization. After graduating from Purdue University, Major Robbins began his railroad work in 1900 as a machinist's apprentice for the Pennsylvania Railroad at its Meadow Shops, and continued in its service until March, 1921. At the time the company's locomotive testing laboratory was opened at Altoona, Major Robbins was assigned to work at that place. Subsequently, he occupied positions as motive power inspector, assistant road foreman of engines, assistant master mechanic and master mechanic, his last appointment being master mechanic of the Pittsburgh Terminal division. During the war, he served with the 19th Engineers and later was commanding officer of the 65th Engineers and acted as superintendent of motive power of the 16th Grand Division of the Transportation Corps.

## Obituary

**William J. Clark,** advisory manager of the railway department of the General Electric Company, died at his home in New York City on December 12 at the age of 68. Mr. Clark had been connected with the company for 34 years; his headquarters were at the New York City office of the company.

# Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company, which was reported in the *Railway Age* of December 16 as contemplating the construction of a second track on the Albuquerque division for 8.6 miles between Dalies, N. M., and Rio Puerco and for 32.6 miles between Perea, N. M., and Defiance, has awarded the contract to Sharp & Fellowes of Los Angeles, Cal., and will begin construction upon the completion of the second track work now under way at Griffith, Ariz.

CANADIAN NATIONAL.—This company will construct a connection approximately 29½ miles long, between the Canadian Northern Ontario Railway near Longlac, Ont., and the National Trancontinental Railway near Nakina. Longlac is on the Canadian Northern main line between Montreal and Winnipeg, 480.7 miles northwest of North Bay, while Nakina is 52.25 miles west of Cochrane. The distance from Winnipeg to Montreal, via the National Trancontinental to Nakina, the proposed connection to Longlac, and the Canadian Northern to Montreal, will be 1,357 miles as compared with 1,411 via the Canadian Pacific, and 1,459 via the Canadian Northern through Port Arthur. The distance from Winnipeg to Toronto will likewise be reduced to 1,207 miles, via the new line, as compared with 1,257 miles, via the National Trancontinental to Cochrane and the Temiskaming & Northern Ontario, and 1,309 miles, via the Canadian Northern line through Port Arthur. This route will also eliminate the necessity of dropping down from the height of land to Lake Superior at Port Arthur and rising again at Winnipeg.

CHESAPEAKE & OHIO.—This company is reported to have approved the construction of a 90 ft. by 242 ft. two story fruit terminal station at Cincinnati, O., to cost approximately $240,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company will construct a 24 ft. by 115 ft. passenger station at Carlisle, Ark., to cost approximately $15,000.

GULF, COLORADO & SANTA FE.—This company is constructing with company forces a 32 ft. by 80 ft. frame freight station, with platform at McGregor, Tex., to cost approximately $5,250, to replace a warehouse which was recently destroyed by fire.

ILLINOIS CENTRAL.—This company is considering plans for the construction of a new freight house and passenger station at Covington, Ky., to replace one which was recently destroyed by fire with a reported loss of $100,000.

ILLINOIS CENTRAL.—This company contemplates the construction of a new single track line from Edgewood, Ill., to the Ohio river at Metropolis and the reconstruction of its line from that point to Fulton, Ky., a total distance of approximately 175 miles. The present bridge of the Chicago, Burlington & Quincy and the Nashville, Chattanooga & St. Louis at Metropolis will be used. The new line will be about 20 miles shorter than the present route via Centralia, Ill., and Cairo, and will avoid heavy grades on the existing line.

UNION PACIFIC.—This company has completed plans for the immediate construction of shops and yards at Los Angeles, Cal., to cost approximately $1,750,000. The new terminal will include an enginehouse, locomotive shops, freight car shops, coach shops, yards and related facilities.

### Boston & Albany Authorizes $4,000,000 Station at Springfield, Mass.

The Boston & Albany has authorized a new station at Springfield, Mass., estimated to cost about $4,000,000. Bids will be called for as soon as detailed plans can be completed. It is estimated that approximately three years will be required to complete the work which includes the station proper, an office building, a baggage, mail and express building and a new interlocking system, besides platforms, tracks, subways, etc. Nine tracks with 20 ft. platforms and canopies will be provided at the station.

# Railway Financial News

ALABAMA GREAT NORTHERN.—*Authorized to Procure Authentication and Delivery of Bonds.*—This company has been authorized by the Interstate Commerce Commission to procure the authentication and delivery of $500,000 of first mortgage 5 per cent gold bonds to be held in the treasury.

ANN ARBOR.—*Pennsylvania Leases Terminals.*—The Pennsylvania Railroad has entered into a 100-year contract with the Ann Arbor for the use of the latter's terminals in Toledo, Ohio, and its road to the Michigan state line.

CAROLINA, CLINCHFIELD & OHIO.—*Bonds Sold.*—A syndicate composed of Blair & Co., Inc., Ladenburg, Thalmann & Co., Cassatt & Co., Spencer Trask & Co., Redmond & Co. and A. G. Becker & Co., has sold $8,000,000 first and consolidated mortgage 30-year 6 per cent bonds at 96½ and interest, to yield about 6.25 per cent.

CHESAPEAKE & OHIO.—*Van Sweringens Negotiating for Control.*—Negotiations are reported under way between O. P. Van Sweringen, of Cleveland, and H. E. Huntington, chairman of the Chesapeake & Ohio board, for the purchase of the latter's holdings in the road.

The Van Sweringen interests control the New York, Chicago & St. Louis, the Toledo, St. Louis & Western and the Lake Erie & Western.

CHICAGO & ALTON.—*Protective Committee Formed.*—A preferred and common stockholders' protective committee has been formed to safeguard these holders in the reorganization. An agreement is being prepared and stockholders are urged to deposit holdings to obtain the benefits of concerted action. Walter T. Rosen, of Ladenburg, Thalmann & Co., is chairman of the committee, and the other members are: Franklin Q. Brown, of Redmond & Co.; George Woodruff, vice-president of the National Bank of the Republic, of Chicago; Edward A. Pierce, of A. A. Housman & Co., and Hugh K. Prichitt, of Prichitt & Co. Feiner, Maass & Skutch are attorneys for the committee and S. O. Levinson is counsel. Thomas F. Thornton, of 66 Pine street, New York, is secretary of the committee.

CHICAGO, PEORIA & ST. LOUIS.—*Asks Authority to Abandon Line.*—The receivers have filed an application with the Interstate Commerce Commission for authority to abandon this company's entire line from Pekin to East St. Louis, Ill., with branches from Havana to Jacksonville and from Lock Haven to Grafton, a total of 237 miles. The application says that since federal control the company has been unable to pay its operating expenses from revenues. It was unable to pay its taxes amounting to $120,000 due on April 1, 1922. The taxing authorities of Illinois have been threatening the sale and forfeiture of the property and the receivers are unable to sell receivers' certificates.

DEATH VALLEY.—*Authorized to Issue and Sell Capital Stock.*—This company has been given permission by the Railroad Commission of California, to issue and sell from time to time at not less than par, its capital stock in an amount not exceeding $99,100 and to use the proceeds to retire at maturity at the rate of exchange then prevailing, 277 first mortgage, 5 per cent, sterling sinking fund bonds. The proceeds are to be used in conjunction with the company's sinking fund in retiring the bonds.

ERIE.—*Equipment Trust Authorized.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of $2,800,000 of 5 per cent equipment trust certificates to be issued by the Commercial Trust Company of Philadelphia, and to be sold at not less than 97.

GEORGIA, ASHBURN, SYLVESTER & CAMILLA.—*Authorized to Issue Stock.*—This company has been authorized by the Interstate Commerce Commission to issue $405,000 of common stock for the purpose of acquiring and rehabilitating the railroad purchased from the Hawkinsville & Florida Southern.

GREAT NORTHERN.—*Reduces Dividend.*—The directors have declared a semi-annual dividend of $2.50 a share, payable February 1 to stock of record December 29. This compares with $3.50 a share declared in June, last.

See editorial in this issue entitled "On a 5 Per Cent Basis."

INTERNATIONAL-GREAT NORTHERN.—*Purchased by St. L.-S. F.*—See article on another page of this issue entitled "Frisco Buys International-Great Northern."

MISSISSIPPI EXPORT.—*Asks Authority to Operate Line.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing it to operate a line from Pascagoula to Evanston, Miss., 42 miles, formerly operated by the Alabama & Mississippi Railroad.

MISSOURI, KANSAS & TEXAS.—*Lines Sold.*—The McKinney-Shreveport branch was sold at Greenville, Tex., on December 16 to representatives of Cook & Nathan Co., investment brokers of New York, who are said to hold an agreement to transfer the property to William Edenborn, president of the Louisiana Railroad & Navigation Company. The price was $700,000, the minimum bid fixed by the federal court, which ordered the line sold.

Representatives of J. & W. Seligman & Co., and Hallgarten & Co., the reorganization managers who purchased the Oklahoma properties of the Missouri, Kansas & Texas, have purchased the Texas lines for $6,500,000 and the Wichita Falls & Northwestern, a subsidiary road, for $2,220,300.

The reorganization of the Missouri, Kansas & Texas was approved on December 19 by the Public Service Commission of Missouri. The new name of the road is Missouri-Kansas-Texas Railroad Company.

NORFOLK SOUTHERN.—*Additional Loan Approved.*—The Interstate Commerce Commission has approved an additional loan to this company of $355,000 to aid it in the purchase of reconstructed freight cars.

PENNSYLVANIA.—*Leases Ann Arbor Terminals.*—See Ann Arbor.

READING COMPANY.—*Authorized to Assume Liability.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability as guarantor for $500,000 of 4 per cent first mortgage bonds of the Philadelphia & Frankford.

SOUTHERN PACIFIC.—*Settles With Railroad Administration.*—This company has effected a final settlement with the Railroad Administration covering the accounts arising from federal control, by which it has received from the director general $9,250,000.

ST. LOUIS-SAN FRANCISCO.—*Purchase of I.-G. N.*—See article on another page of this issue entitled "Frisco Buys International-Great Northern."

## Dividends Declared

Baltimore & Ohio.—Preferred, 2 per cent, semi-annually, payable March 1 to holders of record June 13.

Canada Southern.—1½ per cent, semi-annually, payable February, to holders of record December 29.

Cleveland, Cincinnati, Chicago & St. Louis.—Common, 1 per cent; preferred, 1¼ per cent, quarterly; both payable January 20 to holders of record December 29.

Detroit River Tunnel.—3 per cent, semi-annually, payable January 15 to holders of record January 8.

El Paso & Southwestern.—1½ per cent, quarterly, payable January 2 to holders of record December 26.

Great Northern.—$2.50, semi-annually, payable February 1 to holders of record December 29.

Kansas City Southern.—Preferred, 1 per cent, quarterly, payable January 15 to holders of record December 30.

Northern Central.—4 per cent, semi-annually, payable January 15 to holders of record December 30.

Philadelphia & Western.—Preferred, 1¼ per cent, quarterly, payable January 15 to holders of record December 31.

Pittsburgh & Lake Erie.—$2.50, semi-annually, payable February 1 to holders of record January 11.

## Trend of Railway Stock and Bond Prices

| | Dec. 19 | Last Week | Last Year |
|---|---|---|---|
| Average price of 20 representative railway stocks | 63.83 | 64.84 | 57.13 |
| Average price of 20 representative railway bonds | 85.10 | 85.31 | 80.98 |

# Railway Officers

## Executive

**Eugene Fox**, general traffic manager of the El Paso & Southwestern, with headquarters at El Paso, Tex., has been elected vice-president in charge of traffic, with the same headquarters, effective January 1, 1923.

**L. E. Martin**, whose promotion to assistant to the president of the St. Louis-San Francisco was reported in the *Railway Age* of November 18, was born on December 12, 1872, at South Olive, Ohio. He entered railway service on June 1, 1892, as a clerk and stenographer in the stores department of the Kansas City, Ft. Scott & Memphis, with headquarters at Kansas City, Mo. He was promoted to maintenance clerk in the office of the general superintendent at Kansas City in January, 1899, and when the Kansas City, Ft. Scott & Memphis was taken over by the Frisco in August, 1901, he was transferred to Springfield, Mo., as chief clerk to the superintendent of bridges and buildings. He later was transferred to the office of the division engineer. He was promoted to assistant chief clerk to the general superintendent in August, 1906, and was transferred to the office of the senior vice-president at St. Louis, Mo., in December, 1908. He was promoted to chief clerk in the same office in May, 1911, and two years later was transferred to the office of the receiver and chief operating officer. During the period of Federal control he was assistant to the general manager with headquarters at St. Louis, Mo. When the roads were returned to private operation in March, 1920, he was appointed chief clerk to the president and held this position until November of this year, when he was promoted to assistant to the president.

L. E. Martin

### Resignations on Central New York Southern

Roger B. Williams, Jr., has resigned as president, director and member of the executive committee of the Central New York Southern, effective December 20, 1922. R. B. Williams has resigned as vice-president and director and T. P. Clancy has resigned as director, treasurer, assistant secretary and general manager. In resigning the above mentioned officers have made the following statement in explanation:

"In 1917 the effective control of the corporation, through an agreement at that time deemed necessary, passed into the hands of Messrs. Ford, Bacon & Davis of New York, by virtue of their possession of stock. Certain differences of opinion have arisen between the resigning officers and those in control, culminating in the passage of a resolution of the board of directors committing it to an abandonment of the railroad. The resigning officers feel that such abandonment would be injurious to the property and inimical to the interests of the communities served which have become so largely dependent upon the railroad for transportation. They also feel that such action should not be taken without first exhausting all practical means of preserving the property as a going concern, and that such means had not been exhausted at the time the resolution was passed. While resisting by their arguments and votes the passage of the resolution they were powerless to prevent it. In these circumstances they found it impossible to continue official connections with the corporation and by so doing appear to aid in an attempt to carry into execution a policy to which they are utterly opposed. They have also severed all connections with the Ithaca Traction Corporation, and the Withburn Corporation, all of the stock of each of these corporations being owned by the Central New York Southern Railroad Corporation."

## Financial, Legal and Accounting

**J. C. Stineman**, chief claim agent of the Michigan Central, with headquarters at Detroit, Mich., has been appointed chief claim agent of the New York Central lines, with headquarters at Chicago, Ill., and Indianapolis, Ind., succeeding W. H. McGarr, who has resigned to engage in other business.

## Operating

**G. W. Leslie** has been appointed general manager of the Ohio & Kentucky, with headquarters at Cannel City, Ky.

**J. W. Martz**, whose promotion to superintendent of the Third division of the Denver & Rio Grande Western, with headquarters at Gunnison, Colo., was reported in the *Railway Age* of December 2, was born on September 19, 1867, at Crawfordsville, Ind. He entered railway service as a locomotive fireman on the Union Pacific at Ellis, Kan., in 1885. He entered the service of the Denver & Rio Grande as a brakeman in 1888, and served in this capacity and as a conductor until 1909 when he was promoted to trainmaster on the First division, with headquarters at Denver, Colo. He was promoted to assistant superintendent with the same headquarters in 1915 and held this position until November 23, 1922, when he was promoted to superintendent of the Third division.

**J. H. Aydelott**, whose promotion to general superintendent of the Illinois district of the Chicago, Burlington & Quincy, with headquarters at Galesburg, Ill., was reported in the *Railway Age* of December 2, was born in Jersey county, Ill., in 1883. He entered railway service as a stenographer and clerk in the mechanical department of the Chicago, Burlington & Quincy, at Brookfield, Mo., in September, 1902. In 1908, he was promoted to chief clerk to the division superintendent at St. Joseph, Mo., and in 1911, was transferred to the office of the general superintendent at St. Louis, Mo. A year later he entered the office of the general manager at Chicago in the same capacity, and held this position until 1916, when he was promoted to trainmaster, with headquarters at La Crosse, Wis. He was promoted to division superintendent, with headquarters at Hannibal, Mo., in 1917, and during the next three years was transferred to Omaha, Neb., and Casper, Wyo. He was promoted to assistant superintendent of transportation, with headquarters at Chicago in 1920, and a year later was promoted to superintendent of transportation, with the same headquarters, which position he held at the time of his recent promotion to general superintendent.

**I. H. Luke**, whose promotion to assistant chief operating officer of the Denver & Rio Grande Western, with headquarters at Denver, Colo., was reported in the *Railway Age* of December 2, was born in Tama county, Iowa. He entered railway service in 1877, in the maintenance of way department of the Missouri Pacific. He became a telegraph operator on July 1, 1881, and was promoted to chief dispatcher on December 1, 1889. From June 1, 1896, to December 1, 1902, he was division superintendent at Concordia, Kan., and Sedalia, Mo. During the next five years he was superintendent of the Second and Third divisions of the Denver & Rio Grande, with headquarters at Salida, Colo., and on October 1, 1907, he left the employ of this road to become superintendent of the Kansas City Southern, with headquarters at Texarkana, Tex. He returned to the Denver & Rio Grande as superintendent of the First division on January 6, 1910, but accepted the general managership of the Missouri, Oklahoma & Gulf, with headquarters at Muskogee, Okla., on October 10 of the same year. He returned to the Denver & Rio Grande on September 1, 1911, as superintendent of the Fourth division, with headquarters at Alamosa, Colo., and in January, 1913, was transferred to the Second division, with headquarters at Salida. His appointment as superintendent of the Salt Lake division

on November 1, 1913, was followed on February 1, 1917, by his acceptance of the position of vice-president and general manager of the Utah Railway with headquarters at Salt Lake City, Utah. On October 1, 1918, he returned to the Denver & Rio Grande as general superintendent of Utah lines, with headquarters at Salt Lake City, and held this position until his recent appointment as assistant chief operating officer, with headquarters at Denver, Colo.

### Traffic

**H. J. Niemann,** whose promotion to general freight agent of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, with headquarters at New Orleans, La., was reported in the *Railway Age* of November 18 (page 965), was born in New Orleans, La., on January 25, 1885. He entered railway service as a messenger in the general freight office of the Southern Pacific at New Orleans on September 1, 1902, which position he held until January 24, 1906, when he entered the employ of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific as assistant rate clerk in the local offices at New Orleans. He was promoted to chief clerk in the office of the freight traffic manager in 1916, and remained in that capacity until the war. During federal control he was a traffic representative in the corporate offices of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific at New Orleans, La. With the return of the roads to their owners on March 1, 1920, he was appointed assistant general freight agent, with the same headquarters, which position he was holding at the time of his recent promotion.

H. J. Niemann

**A. E. Reilly,** whose promotion to general western passenger agent of the Pere Marquette with headquarters at Chicago was reported in the *Railway Age* of December 2 (page 1070), was born on July 16, 1876, at Chicago, Ill. He entered railway service in January, 1891, as a messenger in the freight office of the Grand Trunk at Elsdon, (Chicago) Ill. He became a telegraph operator at the same place in 1893, and during the next four years served as telegraph operator and agent at various points on the Grand Trunk. He entered the city ticket office at Chicago as a ticket seller and passenger agent in June, 1897, and held this position until 1900, when he was promoted to rate clerk in the passenger office. He subsequently was promoted to chief rate clerk and chief clerk in the same office. In 1918 he was transferred to Detroit as chief clerk in the passenger department of the consolidated railroads under Federal control, whose headquarters were in that city. During the period of government operation he became more closely allied with the Pere Marquette, and when the roads were returned to their owners on March 1, 1920, he remained with the Pere Marquette as chief clerk in the general passenger office at Detroit, which position he held at the time of his recent promotion to general western passenger agent.

A. E. Reilly

**F. T. Alexander,** ticket agent at the consolidated ticket office at Louisville, Ky., has been promoted to division passenger agent of the Louisville & Nashville, with headquarters at Atlanta, Ga., succeeding H. C. Bailey, deceased.

### Mechanical

**H. L. Hanna** has been appointed mechanical engineer of the New York, Chicago & St. Louis with headquarters at Cleveland, Ohio, succeeding T. A. Lawes, retired.

### Purchasing and Stores

**C. S. Williams** has been appointed stationer of the Southern Pacific lines, with headquarters at Houston, Tex., succeeding H. O. Koch, deceased.

## Obituary

**L. L. Dawson,** who was superintendent of motive power of the Ft. Worth & Denver City, with headquarters at Childress, Tex., until his retirement in 1918, died on December 11 at Champaign, Ill. He was born on February 5, 1863, in London, England. He came to the United States when a boy and entered railway service in February, 1880, as a machinist's apprentice in the shops of the Illinois Central at Champaign, Ill. He received various promotions until he was made foreman of the shops at Champaign, in May, 1892. He was promoted to general foreman of shops at Louisville, Ky., in January, 1897, and a year later he was promoted to master mechanic at Memphis, Tenn. He held this position for several years until his appointment as superintendent of motive power of the Ft. Worth & Denver City, which position he held at the time of his retirement. Since 1918, he has lived on his plantation at Greenwood, Miss.

**F. E. Batturs,** assistant passenger traffic manager of the Southern Pacific, with headquarters at San Francisco, whose death on December 7, at Washington, D. C., was reported in the *Railway Age* of December 16, was born on August 27, 1870, at San Francisco, Cal. He entered railway service in April, 1886, as an office boy in the general passenger department of the Southern Pacific. He was promoted to clerk in the same department and held this position until August, 1892, when he was placed in charge of the division of rates in the general passenger department. He was transferred to the ticket audit office in charge of rates and divisions in June, 1894, and held this position until May, 1899, when he was promoted to chief clerk to the assistant general passenger agent. On February 1, 1904, he was appointed assistant general passenger agent of Morgan's Louisiana & Texas, and the Louisiana Western, with headquarters at New Orleans, La., and was promoted to general passenger agent of these lines in January, 1905. Four years later he returned to the Southern Pacific, Pacific System, as assistant general passenger agent with headquarters in San Francisco, Cal. He was promoted to general passenger agent of the Southern district, with headquarters at Los Angeles, Cal., in March, 1911, and was transferred to San Francisco in April, 1915. He was promoted to assistant passenger traffic manager, with headquarters at San Francisco, on September 1, 1918, and held this position until the time of his death.

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THE PENNSYLVANIA RAILROAD finds that the annual athletic meets of its employees have been a real and useful means of cultivating the "Pennsylvania family" spirit; and, as evidence of this, cites a recent experience of the editor of the Pennsylvania News. This editor received from each one of a score of his readers the same citation from H. G. Wells' Outline of History; a passage in the history of Greece, wherein he says that the Greek people were held together, not by political organization or a constitution but by common speech, traditions, epics, religion, and, still more important, the Olympian games, that were held every four years. These games were held regularly for more than 1,000 years.